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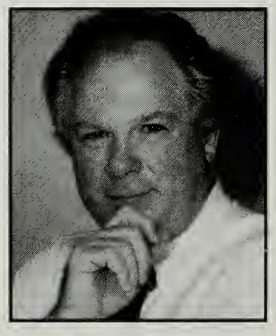

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Reported Pap Test Use by Hispanic Women in Connecticut and Long Island

ANTHONY P. POLEDNAK, PH.D.

ABSTRACT—Some 308 Hispanic adult women 20 to 74 years of age living in Connecticut and Long Island (New York) were interviewed by telephone in February-May 1992. Respondents interviewed in Spanish (46% of the 308) had lower rates of awareness and use of Pap tests than women interviewed in English, and level of education was inversely associated with use of Pap tests. In a multivariate analysis, statistically significant predictors of reporting a recent Pap test (ie, in 1991-92) were whether or not the respondent had a health-care visit during the past year, educational level, and language of interview. The proportion of women who had ever heard of a Pap test was lower in Connecticut than in Long Island women, even after adjusting for differences in sociodemographic characteristics; among those who had ever heard of Pap tests, use was similar for the two areas. Overcoming barriers to health-care access, along with bilingual educational efforts by physicians and public health workers, are needed to increase Pap test use by Hispanic women and reduce their relatively high incidence rates for invasive cervical cancer.

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From the Connecticut Tumor Registry, Connecticut Department of Health Services, 150 Washington St., Hartford, CT 06106

NATIONAL data on use of Pap tests have been published from the National Health Interview Survey (NHIS), which included 848 Hispanic women in 1987, but results varied by Hispanic subgroup and data on Hispanics were not presented by region.[1] The Hispanic Health and Nutrition Examination Survey (HHANES) includes Puerto Rican Hispanics in the New York City area (encompassing a small part of Connecticut), and results on use of cancer screening tests and other health-related variables have been published for 1982-84.[2] The Centers for Disease Control and Prevention annual Behavioral Risk Factor Surveillance System (BRFSS) telephone surveys of adults, which use random digit-dialing (RDD), include only small numbers of Hispanics in the northeastern states because of the small (albeit increasing) proportion of Hispanics in the population. For example, the 1990 BRFSS survey in Connecticut included only 95 Hispanic men and women.[3]

The present study estimated knowledge and use of Pap tests in 20 to 74-year old Hispanic women in Connecticut and Long Island (that is, Nassau and Suffolk counties in New York), using a telephone survey method less expensive than RDD. In the 1990 Census the numbers of 20 to 74-year-old Hispanic women in the populations were 64,025 in Connecticut and 53,660 in Long Island.

Methods

Samples of telephone numbers of persons listed in telephone directories for Connecticut and Long Island whose surnames had been matched with the 1980 Census list of Spanish surnames, which has been shown to be useful in identifying Hispanic persons,[4] were purchased from Survey Sampling, Inc. (Fairfield, Conn.). The goal was to obtain at least 300 completed interviews of His-

panic adults 20 to 74-year-old in each of the two geographic areas (Connecticut and Long Island). During February- May 1992, a maximum of eight telephone calls was made for each sampled number (including evenings and weekends) over a minimum period of 15 days. If more than one age-eligible Hispanic person was reported in a household, one was selected randomly for interview. Using estimates of the proportion of in-service numbers that were residences and the proportion of residential numbers that were for eligible households (ie, those with a Hispanic person or persons 20 to 74 years old), the estimated response rate was 73.7% (75.0% for Connecticut and 72.1% for Long Island).[5] Some 339 interviews were obtained in Connecticut and 331 in Long Island; after excluding all 357 men and five persons who refused to report their year of birth, there were 308 women (154 in Connecticut and 154 in Long Island) (Table 1).

Spanish-speaking respondents were referred to Spanish-speaking interviewers, and both Spanish and English language versions of the survey were used. After confirming that the respondent was eligible, Hispanic background was queried as Puerto Rican, Mexican or Mexican-American/Chicano, Cuban, or other (specified by country or origin). Puerto Ricans were more common in the Connecticut sample (77 *vs* 60 in Long Island), while Central and South Americans were more common in Long Island (61 *vs* 51 in Connecticut). Last grade of school completed was queried in eight categories (collapsed into five in Table 1), and only three women refused to answer. Family income in 1991 (before taxes) was queried in seven categories (from $10,000 or less to >$60,000), but 14% of respondents refused to answer this question. Marital status was recoded as married *vs* unmarried. Respondents were asked if they had a regular place where they obtained their health care and the date of their last visit for health care. Health insurance coverage was queried as in HHANES. Along with questions on smoking habits[5] and other cancer risk factors, women were asked if they had ever heard of a Pap test and, if yes, had ever had the test. Date of last Pap test was then queried; because some women could only recall the season of the year of their last test, results were analyzed in two categories: last test in 1991-92 (or within about one year of interview) and in 1989-92 (or within about three years of interview). Among women who had ever heard of Pap tests but had not had a test in the past three years, the "most important reason" was asked as an open-ended question.

Statistical significance of differences in frequencies was tested by χ^2 (with continuity correction for fourfold tables). In logistic regression models, with Pap test use in

Table 1.—Sociodemographic Characteristics of 308 20 to 74-Year-Old Hispanic Respondents to a Telephone Survey (February thru May 1992) Who Were Residents of Connecticut or Long Island (New York)

	Connecticut (N=154)		*Long Island (N=154)*	
Variable	***No.***	***%***	***No.***	***%***
Age (yrs.)				
20-34	56	36.4	51	33.1
35-44	48	31.2	52	33.8
45-54	26	16.9	25	16.2
55-64	14	9.1	17	11.0
65-74	10	6.5	9	5.8
		P=0.944[a]		
Education[b]				
<9 yrs.	38	24.7	21	13.6
9-11 yrs.	13	8.4	20	13.0
12 yrs.	45	29.2	57	37.0
Postsecondary	32	20.8	33	21.4
College graduate	25	16.2	21	13.6
		P= 0.086[a]		
Spanish interview	74	48.1	67	43.5
		P=0.493[a]		

[a] *P* value for difference between Connecticut and Long Island samples (χ^2 test).

[b]Data are collapsed from eight original categories of education; education was not reported by three women.

1991-92 and 1989-92 as the dependent variables, independent variables were education (seven categories, after combining vocational/technical training with one to three years of college), age (in five categories, 20-34, 35-44, 45-54, 55-64, and 65-74 years); lack of health insurance or "uninsured" (*vs* "insured"); language of interview (Spanish *vs* English); marital status (married *vs* unmarried); and area of residence (Long Island *vs* Connecticut).

Results

Compared with Long Island women, Connecticut women less often reported ever having heard of a Pap test (74.0% *vs* 86.4%; *P*=.01), ever having had the test (70.8% *vs* 78.6%; *P*=0.149), or having had a Pap test in 1991-92 (53.2% *vs* 61.0%, *P*=0.205); however, having had a test in 1989-92 showed little difference (66.2% *vs* 69.5%; *P*=0.626). Among those women who had ever heard of a Pap test, the proportion who reported having had the test in 1991-92 was similar in the Connecticut (71.9%) and Long Island (70.7%) samples.

More than 40% of women were interviewed in Spanish (Table 1), and knowledge and use of Pap tests were significantly (*P*<.001) lower among these women than among those interviewed in English for both the Connecticut and Long Island samples; only about half of the women interviewed in Spanish reported having had a Pap test in 1989-92 (Table 2).

The proportion of women reporting a Pap test in 1991-92 or in 1989-92 increased with increasing level of education (Table 3); the largest difference was between women with <8 years and 9 to 11 years of education. Differences between the Long Island and Connecticut samples within each level of education persisted, although none reached statistical significance.

In a multiple logistic regression analysis of whether or not a Pap test in 1991 or 1992 was reported, statistically significant predictors were education (positive association), Spanish *vs* English language interview (negative assocation), and having a health-care visit in the past year (positive association). Odds ratios for being married (positive association), being uninsured (negative association) and living in Long Island *vs* Connecticut (positive association) did not reach statistical significance. Age was not an important predictor, independent of the effects of the other variables in the model. When income level (seven categories) for those with known income was substituted for education, results were similar to those in Table 4 but the odds ratio for income was not statistically significant.

By definition, all women who had never heard of a Pap test did not have the test. Among those who had heard of the test, having a test in 1991-92 was significantly associated with having a health-care visit in the past year and being married; the odds ratio for health insurance coverage almost reached statistical significance (Table 4). However, education and language of interview were no longer significant predictors.

In a logistic model for last Pap test in 1989-92 (data not shown), education and language of interview were the only statistically significant predictors; having a health-care visit in the past year was not included in the model because frequency of visits during the past three years (1989-92) was not known; residence in Long Island *vs* Connecticut was not an important predictor (odds ratio=1.06; 95% CI=0.63-1.79).

Aside from not having heard of a Pap test, the most frequently reported reason for not having had a test within the past three years could be categorized as a belief that a test was not necessary (three of 17 women interviewed in English and six of 21 interviewed in Spanish); other responses suggested procrastination (four in English, five

Table 2.—Knowledge and Use of Pap Tests by Language of Interview in Connecticut and Long Island Samples (February to May 1992)

	Connecticut			*Long Island*		
	English (N=80) %	*Spanish (N=74) %*	*Total (N=154) %*	*English (N=87) %*	*Spanish (N=67) %*	*Total (N=154) %*
Ever heard of Pap test	87.5	59.5	74.0	96.6	73.1	86.4
Ever had Pap test	85.0	55.4	70.8	89.7	64.2	78.6
Pap test in 1991-92	68.8	36.5	53.2	72.4	46.3	61.0
Pap test in 1989-92	80.0	50.0	65.6	79.3	52.2	67.5

All differences between groups defined by language of interview were statistically significant (*P*<.001); for significance of differences between Connecticut and Long Island samples, see text.

Table 3.—Reported Use (%) of Pap Tests by Educational Level						
Education (years)	*Pap Test in 1991-92*			*Pap Test in 1989-92*		
	Connecticut	*Long Island*	*Total*	*Connecticut*	*Long Island*	*Total*
<9	33.3	19.0	25.4	44.7	23.8	37.3
9-11	38.5	65.0	54.5	46.2	75.0	63.6
12	55.6	70.2	63.7	64.4	75.4	70.6
>12	71.4	68.5	70.0	85.7	75.9	80.9
For sample sizes, see Table 1.						

in Spanish), and a lack of (or problems with) a personal physician (three in Spanish, three in English).

Discussion

All telephone surveys involve respondent biases, including higher levels of education and income in comparison with data from the U.S. census.[6] The omission of unlisted telephone numbers (which are included in RDD surveys) also causes biases; however, the results for a single ethnic group, when stratified by educational level (as in Table 3), provide the most unbiased estimates.[7] The use of self-reported data on Pap tests overestimates actual screening rates (ie, by about 20% for Pap test in the last two or three years);[8,9] the degree of underestimation may be unrelated to educational level.[8]

The significantly lower knowledge and use of Pap tests in Hispanic women interviewed in Spanish *vs* English (Table 2) is consistent with findings from the 1987 National Health Interview Survey (NHIS), showing that women speaking only or mostly Spanish had lower knowledge and use of Pap tests (within the past three years) than other women, after controlling for age and education.[1] In logistic regression models, the odds ratio for lack of health insurance (Table 4) was in the expected direction, although it did not quite reach statistical significance. In a study of Mexican-American women in Texas, the effect of English language proficiency disappeared after adjustment for income, education, and health insurance coverage.[10] In this study, however, Spanish language of interview was still negatively and significantly associated with having a recent Pap test after education and health insurance coverage were included in a logistic model (Table 4). The association between recent Pap test and both Spanish interview and low educational level were due (at least in part) to lower awareness of Pap tests; that is, when the analysis was limited to those who had heard of Pap tests, the odds ratios for education and language of interview were no longer statistically significant (Table 4). The importance of marital status in predicting a recent Pap test among women who had heard of the test (Table 4) could reflect inadequate control for socioeconomic status and/or other factors such as the importance of the family in Hispanic culture and lifestyle, but this requires further study.

Table 4.—Logistic Regression Models for Last Pap Test in 1991-92				
Variable	*All Women (N=305)*		*Women Who Have Heard of Pap Test (N=247)*	
	Odds Ratio	*95% Confidence*	*Odds Ratio*	*95% Confidence*
Age (5 groups)	1.00	0.98-1.02	1.00	0.97-1.02
Education (7 groups)	1.23	1.06-1.42*	1.13	0.95-1.34
Language (Spanish *vs* English)	0.54	0.30-0.97*	0.78	0.39-1.57
Health-care visit	2.10	1.16-3.82*	2.01	1.01-4.00*
Marital status (married *vs* not married)	1.59	0.96-2.64	2.29	1.26-4.17*
Lack of health insurance	0.57	0.32-1.03	0.51	0.26-1.00
Area (Long Island *vs* Connecticut)	1.42	0.86-2.35	0.98	0.54-1.78
The total sample size was 305, after excluding three women with unknown education. The dependent variable was whether or not the respondent reported having had a Pap test in 1991-92, or within about one year prior to interview in early 1992. *$P<.05$				

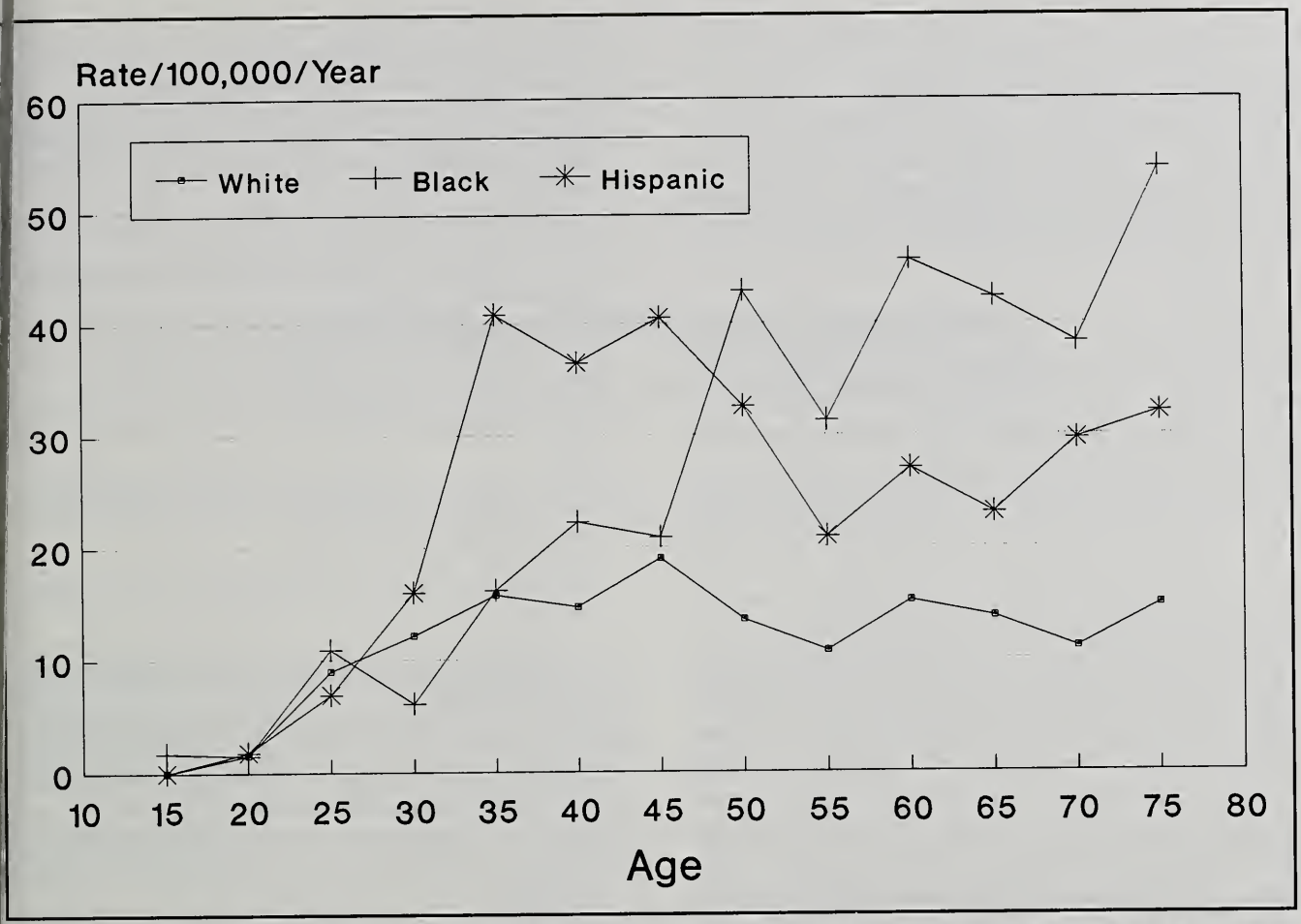

Fig.—Average annual age-specific incidence rates (1988-92) for invasive cervical cancer in Connecticut women by racial-ethnic group.

Differences in rates of use of Pap tests between the Connecticut and Long Island samples were due to less awareness of Pap tests in the Connecticut Hispanic women; that is, among women who had heard of a Pap test, reported utilization was not lower in the Connecticut sample. The lower awareness of Pap tests in Connecticut than in Long Island women was unexplained; in a logistic regression model with ever (*vs* never) heard of Pap tests as the dependent variable, the odds ratio for area of residence (Connecticut *vs* Long Island) was still statistically significant when education, language of interview, marital status, and health-care visit in the past year were included (data not shown).

This study was limited to Hispanic women. In the 1987 NHIS among women 18+ years old, 15.1% of Hispanics (*vs* only 4.1% of blacks and 2.1% of whites) reportedly had never heard of a Pap test, and 65.0% of Hispanics (*vs* 78.9% of blacks and 73.3% of whites) had a Pap smear in the past three years);[1] these frequencies for Hispanics are roughly similar to those from the present study (Table 2). In the 1990 BRFSS Survey in Connecticut, Hispanic women were less likely to have ever had a Pap test than non-Hispanic whites or blacks, although the sample sizes for Hispanics and blacks were small.[3] These findings are consistent with the higher incidence rates reported from various studies of the incidence of invasive cervical cancer in U.S. Hispanic (*vs* non-Hispanic white) women,[11] including Puerto Rican-born women in Long Island[12] and Connecticut[13] and "Hispanic" women in 1980-88 in Connecticut (as estimated from Spanish surnames).[14]

The Connecticut Tumor Registry (CTR) infrequently obtains information (from hospitals) on Hispanic ethnicity or maiden names of women. Studies using maiden names from death records suggest that, despite misclassification of individual women (due to marriage between Hispanics and non-Hispanics), only small errors may be involved in estimating age-specific cancer incidence rates by Spanish-surname matching in the CTR.[14,15] Using both Spanish-surname matching and the limited information on "Spanish origin" recorded in the CTR, estimated average annual age-specific incidence rates for invasive cervical cancer for "Hispanic" women in Connecticut in 1988-92 were higher than those for all white women after age 25-29, and higher than those for black women from age 30-34 to 40-44 years (Fig. 1). The average annual age-standardized rates for 1988-92 using the "direct" method (with the age distribution of the total female population of Connecticut in 1990 as the standard) were 19.3 for "His-

panic" women (74 cases), 19.0 for all black women (98 cases), and 9.4 for all white women (713 cases) in Connecticut. Rates for "non-Hispanic whites" were not estimated because in the U.S. census many Hispanics are of "other" race while in the CTR almost all "Hispanics" are "white." However, rates for whites (Fig. 1) would be little affected by the inclusion of "Hispanic" cancer cases. Data on invasive cervical cancer rates were not available for Long Island.

Pap tests involve a considerable false-negative rate, because of inherent limitations in cell sampling, inadequate smears, and misread smears.[16] Nevertheless, the majority of invasive cervical cancers occur in women who have not undergone routine screening;[16,17] inadequate follow-up of women with abnormal smears is another problem.[17] Low Pap test rates in inner-city minority women may be greatly increased by improving access to medical care and increasing physician advice about screening.[18] The present findings also suggest that programs to increase awareness of Pap tests, and of the need for periodic screening, in Hispanic women should include bilingual educational materials appropriate for women with lower education. The national Year 2000 objectives for a Pap test in the last three years are 80% for Hispanic women (age 18 years and older) and 75% for all women with less than a high school education.[19] This study shows much lower rates for last Pap test within about three years of interview, especially among the least-educated subgroups. Guidelines from most organizations involve annual Pap tests starting at age 18 (or onset of sexual activity) but less frequent examinations after three consecutive "normal" tests (at the discretion of the physician). However, screening every three years (*vs* every one or two years) may involve an elevated risk of invasive cancer,[20] and the occurrence of false-negative smears must be recognized.

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Predictors of Positive Tuberculin Skin Test Results in a Jail Population

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ABSTRACT—The purpose of this analysis was to determine the prevalence and predictors of positive tuberculin skin tests (TSTs) in a jail population. TST results and demographic data were obtained for 996 male inmates of a Connecticut jail who were tested following identification of a case of multidrug-resistant *Mycobacterium tuberculosis (MDR-TB).* Inmates were predominantly young (median age, 26 years) and Black (51%) and were born in the United States (96%). Overall 109 (11%) inmates had positive TST results. TST positivity was strongly associated with being born outside the United States (adjusted odds ratio [aOR]=11.3, 95% confidence interval [95% CI] 4.9-25.8), being Puerto Rican born (aOR=3.7, 95% CI 1.9-7.4), and increasing age (15-24 years aOR=l [referent]; 25-34 years aOR=2.1 95% CI 1.2-3.5; 35-44 years aOR=4.3 95% CI 2.4-7.7; ≥45 years aOR=6.4 95% CI 2.8-14.6).The combination of being U.S.-born and Black was also associated with increased rates of positive TSTs. The prevalence of TST positivity was >10% for all age groups of inmates born outside the United States or Puerto Rico and for Puerto Rican-born inmates aged ≥25 years and U.S.-born inmates aged ≥35 years. Analysis of routinely collected TST data allows predictors of TST positivity to be identified and may help determine population subgroups for whom anergy screening and preventive therapy should be considered.

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TUBERCULOSIS (TB) has reemerged as a public health problem, particularly among populations with a high prevalence of human immunodeficiency virus (HIV) infection (eg, prison and jail inmates).[1,2] Screening high-risk populations for infection with *Mycobacterium tuberculosis* and active TB are crucial to achieving the nation's goal of eliminating TB by the year 2000.[3] However, published data on the prevalence of tuberculin skin test (TST) positivity in jail populations are scarce.

On 20 August 1993, the Connecticut Department of Public Health and Addiction Services (DPHAS) was notified of a jail inmate who had multidrug-resistant *Mycobacterium tuberculosis* (MDR-TB). The inmate had been incarcerated in a Connecticut jail from 1 July to 31 July 1993. This was the first case of MDR-TB identified in the Connecticut correctional system, and the event attracted considerable media attention. Because the inmate had been housed initially in the general jail population before being transferred to the infirmary, the Department of Correction (DOC) began tuberculin skin testing of all inmates and employees of that jail.The purpose of the testing was to identify any transmission of infection as a result of exposure to the index case. This testing of inmates provided us the opportunity to assess TST positivity within demographic subgroups in a jail population in Connecticut.

The jail houses male inmates who are newly arrested and awaiting trial or who have received short sentences (usually <1 year). Incarceration may be for any of a broad

spectrum of crimes. On any day more than 800 inmates are in the jail. A large number of inmates are transferred into and out of the jail on a daily basis, primarily to and from court and to other DOC facilities. During July 1993 a total of 1,442 inmates were housed in the jail for variable periods of time.

Methods

The data for this analysis were taken from the inmate tuberculin skin testing program. Two rounds of inmate testing were undertaken to determine whether any inmate had a TST conversion as a result of exposure to the index-patient. However, for this analysis the baseline prevalence of TST positivity was the measure of interest, so only initial TST results were used to avoid such conversions. Only one inmate had a documented TST conversion which may have resulted from exposure to the index case. The first round of testing began on 25 August 1993 and the second on 9 September 1993. An effort was made to test all inmates incarcerated at these times. On the first day of testing, 795 (97%) of the 819 inmates incarcerated were tested or reported past positive TST results. In the subsequent round of testing a further 94 new or not previously tested inmates received an initial TST or reported past histories of a positive TST. In addition to these two rounds of testing, any inmate who had been in the jail in July, the month that exposure to the index case may have occurred, and then reentered between 25 August and 31 October 1993, was tested. Thus, inmates eligible for this study included any inmates incarcerated during the testing periods and inmates who had been incarcerated in July.

Table 1.—Percentage distribution of demographic factors for the cohort of inmates incarcerated in July and the inmate study sample, Connecticut, 1993.

Demographic Factors	*% of Inmates*	
	July Cohort (N=1,442)	*Study Sample (n=996)*
Age (years)		
15-24	42	43
25-34	37	37
35-44	16	16
≥45	5	4
Race		
White non-Hispanic	29	28
Black non-Hispanic	50	51
Hispanic	21	21
Country of birth		
United States	86	85
Puerto Rico	10	11
Other	4	4
Population of town of residence (no. persons)*		
<50,000	17	16
50,000-99,999	13	12
≥100,000	68	69
TB incidence in town of residence		
Low	49	48
High	51	52

* Percentages do not add up to 100% because of missing data

TSTs were conducted by DOC infirmary staff. Each inmate was administered five tuberculin units of purified protein derivative (PPD)-tuberculin using the Mantoux method. An inmate was considered TST positive if he a) had induration of ≥10 mm at the TST injection site at 48-72 hours or b) had a past history, either verbal or documented, of a positive TST result.

Demographic data were available for all inmates in the study population and for the entire cohort of inmates incarcerated during July, enabling us to compare our study sample with an inmate cohort. The factors available for assessment included age, race or ethnicity (Black, White, Hispanic, Native American, and Asian), country of birth (United States, Puerto Rico, and other), and town of residence. We assessed town of residence in two ways: by population size (ie, <50,000, 50,000-99,999, and ≥100,000 persons) and by incidence of TB in the community (low [<10] or high [≥10 cases/100,000 population]). TB incidence in towns was based on rates reported to the DPHAS Tuberculosis Program. Because Hispanic ethnicity and Puerto Rican birthplace were too highly correlated to be assessed simultaneously in a multivariable analysis, we created and assessed a combined race/country-of-birth variable (ie, U.S.-born White, U.S.-born Black, U.S.-born Hispanic, Puerto Rican-born, and born elsewhere). HIV status was available for only 56 inmates. The types of charges or convictions for the inmates were not obtained, nor was duration of incarceration or information on past incarcerations.

Twelve inmates who gave a verbal history of a positive TST result were administered a TST. For this group, the validity of their reported TST histories was investigated.

Statistical Analyses,—Associations between TST positivity and demographic factors were examined by contingency table analysis and unconditional logistic regression. We performed multivariable analyses to access and control for possible confounding between the major univariable predictors of TST positivity. In the logistic regression analyses, all study factors were entered into multivariable models, simultaneously examing their effects. All logistic regression models contained age as a variable. Models were used to assess risk for combinations of race, country of birth, or race/country of birth, and

town by size or town by TB incidence. The study factors retained in the final models were those predictive of tuberculin positivity ($P<0.05$). All analyses were performed with the Statistical Analysis System (SAS) software.

Results

The 996 inmates in the study sample did not differ significantly from the inmates in the July jail population cohort for any of the demographic variables (Table 1). TSTs were administered and read on 963 inmates, including 12 who reported a prior positive TST result. An additional 33 inmates reported a past history of a positive TST, but these inmates were not retested. Overall, 109 (11%) inmates were TST positive, including the 45 (5%) with a history of a positive TST.

The distribution of inmates by age and the age-specific TST positivity prevalence are shown in Fig. 1. The inmate study sample was predominantly young (median age: 26 years), with 79% of the population aged <35 years. The prevalence of positive TSTs increased almost linearly with age, from 3% among inmates aged 15-19 years to 36% among those aged 50-54 years. The prevalence of TST positivity declined among inmates ≥55 years of age; however, only 10 inmates were in this group.

Black non-Hispanic inmates (51%) were the largest racial group (Table 2). There was one Asian inmate in the sample and no Native Americans. Black and Hispanic inmates had similar prevalences of positive TSTs; these prevalences were higher than that for White inmates. However, the likelihood of a positive TST for Black and

Table 2.—Percentage distribution of TST positivity and associated odds ratios by demographic factors in jail inmates, Connecticut, 1993.

Demographic Factors	*Study Sample*		
	# (%) TST Positive (n=996)	*Crude OR (95% CI)*	*Adjusted OR (95% CI)*
Age (years)			
15-24	25 (6)	1.0 (Referent)	1.0 (Referent)
25-34	41 (11)	2.0 (1.2-3.6)	2.1 (1.2-3.5)
35-44	31 (19)	3.8 (2.1-6.9)	4.3 (2.4-7.7)
≥45	11 (26)	5.5 (2.3-13.0)	6.4 (2.8-14.6)
Race			
White non-Hispanic	22 (8)	1.0 (Referent)	
Black non-Hispanic	59 (12)	1.5 (0.9-2.4)	
Hispanic	27 (13)	1.7 (0.9-3.0)	
Country of birth			
United States	74 (9)	1.0 (Referent)	
Puerto Rico	19 (18)	2.2 (1.3-3.9)	
Other	14 (36)	7.2 (3.5-14.8)	
Race/Country of birth			
U.S.-born White	15 (6)	1.0 (Referent)	1.0 (Referent)†
U.S.-born Hispanic	4 (4)	0.7(0.2-2.3)	
U.S.-born Black	55 (11)	2.1 (1.1-3.7)	2.5 (1.4-4.3)
Puerto Rican-born	19 (18)	3.5 (1.7-7.2)	3.7 (1.9-7.4)
Other-born	14 (36)	9.0 (3.9-20.8)	11.3 (4.9-25.8)
Population of town of residence			
<50,000	12 (8)	1.0 (Referent)	
50,000-99,999	16 (13)	2.0 (0.9-4.3)	
≥100,000	80 (12)	1.7 (0.9-3.2)	
TB incidence in town of residence			
Low	42 (9)	1.0 (Referent)	
High	67 (13)	1.5 (1.0-2.3)	

*OR=odds ratio, the relative probability of TST positivity compared with the referent group.
†Referent group includes both U.S.-born Whites and U.S.-born Hispanics.

Hispanic inmates was not significantly increased compared to White inmates ($P>.05$, Table 2).

Thirty-nine (4%) inmates were born in 19 countries other than the United States. Sixteen (41%) of these inmates were born in Caribbean countries; nine (23%), in Latin American countries; and five (13%), in the Middle East. The prevalence of TST positivity for inmates born in these regions was as follows: Caribbean, 19%; Latin America, 56%; Middle East, 60%; and other areas 33%. Compared with inmates born in the United States, those born in Puerto Rico and those born in other countries were at significantly increased risk for having a positive TST. This association was more pronounced when country of birth was combined with race in one variable (Table 2).

Inmates who were residents of larger towns (ie, ≥50,000 population) had a higher prevalence of TST positivity than those from smaller towns, although the difference was not statistically significant (Table 2). Inmates who were residents of towns with high TB incidence were more likely to have a positive skin-test result than those from towns with lower incidence of TB (OR=1.5, $P=.04$).

Multivariable Analysis.—Town of residence was not retained as a variable in any logistic regression model when entered with age and any race and country-of-birth combination. Use of a combined race/country-of-birth variable produced the most descriptive logistic regression model. However, only four U.S.-born Hispanics had positive TSTs, so the parameter estimate for this group had a large standard error (SE=0.5994). Because the prevalence of TST positivity among U.S.-born whites (6%) was similar to U.S.-born Hispanics, these groups were combined as the referent group for the final multivariable model. Being born in a country other than the United States was the strongest predictor of a positive TST, after controlling for age (Table 2).

Table 3.—Prevalence of TST positivity among jail inmates, by age and race/county-of-birth, Connecticut, 1993.

Race/Country-of-birth category	*Inmates with positive TSTs**			
	Age (years)			
	15-24	*25-34*	*35-44*	*≥45*
U.S.-born White	2.5 (2)	2.8 (3)	14.5 (8)	13.3 (2)
U.S.-born Hispanic	1.8 (1)	6.7 (2)	0 (0)	50.0 (1)
U.S.-born Black	5.7 (13)	14.8 (24)	19.0 (15)	20.0 (3)
Puerto Rican-born	9.3 (4)	11.8 (4)	30.0 (6)	55.5 (5)
Other-born	36.4 (4)	33.3 (8)	66.7 (2)	0 (0)

*Tuberculin skin tests

Table 3 shows the prevalence of TST positivity for each age group by race/country-of-birth category by age. The prevalence of TST positivity was ≥10% for all age groups of inmates born outside the United States or Puerto Rico, and for Puerto Rican-born and U.S.-born inmates in older age groups.

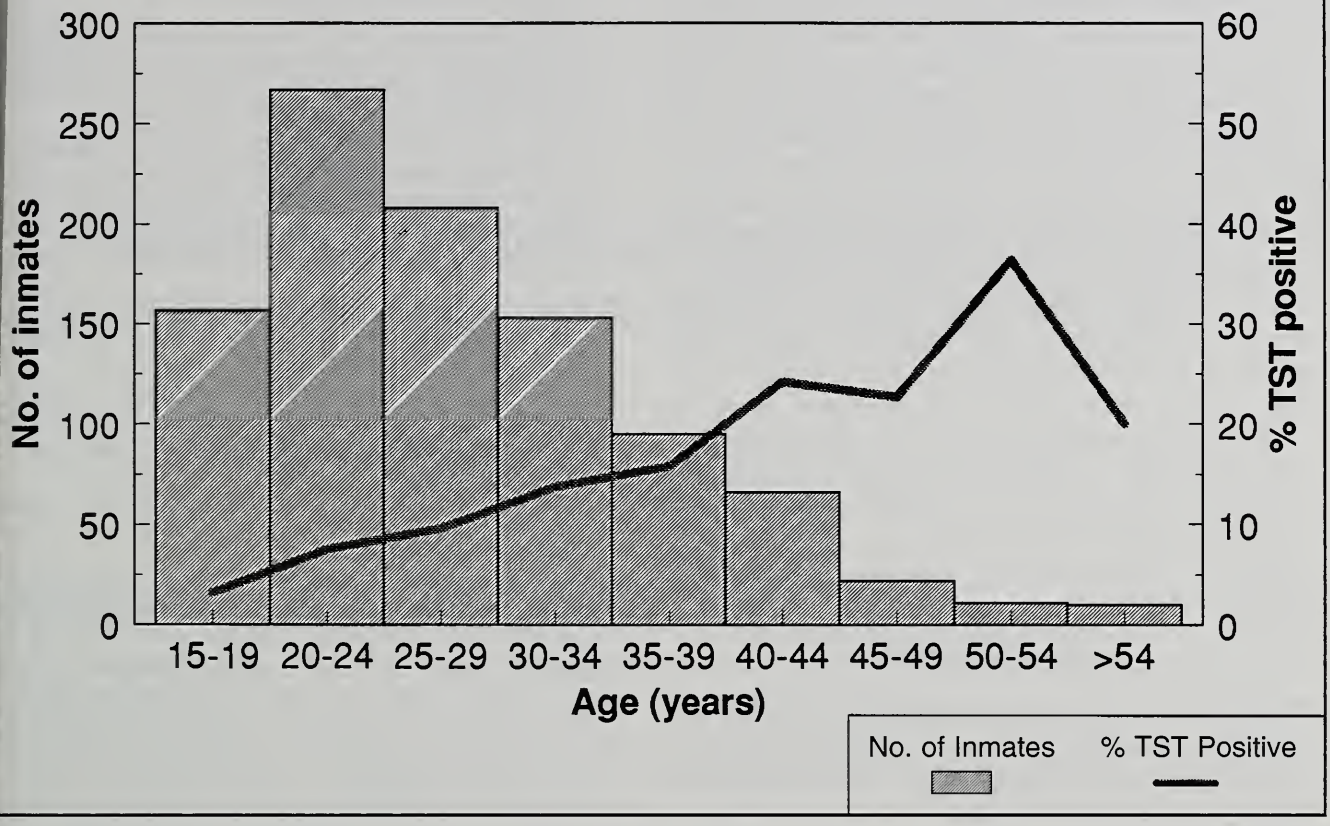
TST History Validation.—Of the 12 inmates who reported a previous positive TST result and who were retested, nine (75%) had an initial TST ≥10 mm, two (17%) had initial TSTs of 0 mm but showed boosting on a second TST, and one (8%) had only one nonreactive TST, but had a TST of 20 mm recorded previously by the DOC.

Discussion

Tuberculin skin testing of selected groups has been recommended as a means of evaluating occupational risks for exposure to *M. tuberculosis* and as an aid in targeting TB prevention efforts.[3,4] Our report is one of only a few such evaluations to be published in the United States, and the first in Connecticut. To the extent that inmates are representative of their respective age, racial/ethnic, and country-of-birth counterparts in Connecticut, these data also describe current TST positivity among young men. As such, these data are consistent with data on the overall incidence of TB in Connecticut (the risk for TB is highest for persons born outside the United States, followed by Puerto Ricans, Blacks, and Whites).[5,6] The relatively high prevalence of positive TST results among inmates <35 years of age who are Black or born in Puerto Rico or another foreign county supports national recommendations to target such persons for tuberculin screening and preventive therapy.[3]

Preventive therapy has been recommended for persons with a predicted probability of TST positivity ≥10% and who have HIV infection and are anergic.[7,8] On the basis of our study results, inmates with a predicted probability of TST positivity ≥10% include those born outside the United States and Puerto Rico, and Black U.S.-born and Puerto Rican-born inmates aged ≥25 years. The systematic use of preventive therapy for inmates in these groups who have documented HIV infection and anergy should be strongly considered. In theory, preventive therapy can be initiated and often completed before inmate release. Preventive therapy for TB is important among inmate populations because of the high potential for an inmate who has or develops active TB to transmit infection to a susceptible population.[1] In addition to HIV infection, inmate mobility, both within and between prisons, and crowded living conditions in prisons are conducive to transmission of *M. tuberculosis*.[1]

Figure 1.— Distribution of inmates and prevalence of positive tuberculin skin tests, by age



The findings of this study also have implications for contact investigations in institutional settings. In any investigation in which TST positivity is used to determine whether persons with high levels of exposure are more likely to become infected than persons with lower levels of exposure, efforts must be made to control for country of birth, race/ethnicity, and age. If such efforts are not made and the exposure groups are substantially different in composition, false conclusions may be drawn.

People administering skin tests are often confronted with a person who gives a history of a positive skin test. In a correctional setting, information from inmates may be considered unreliable. However, all 12 inmates in this study who gave a history of a past positive TST, and were retested, showed evidence of infection. At least in this study, verbal histories of a positive test were reliable.

The overall prevalence of a positive TST result in this Connecticut jail was an estimated 11%. During 1993, the annual population incidence rate of TB disease in Connecticut was 4.7/100,000,[9] and the rate in Connecticut correctional institutions was 28.7/100,000 (unpublished data). In comparison, during 1990 a New York State prison determined that 27% of inmates had skin reactions ≥10 mm at the time of admission,[10] and a New York State jail determined that 17% of inmates had TST results of ≥10 mm.[11] In that same year the incidence of TB among New York State prison inmates was 134 per 100,000.[10] Similarly, a prison in California reported that 30% of inmates had TST results of ≥10 mm and a TB incidence rate of 184/100,000 during 1990-91.[12] The prevalence of TST positivity among the inmates of this Connecticut jail was lower than that found in states with a high incidence of TB in their correctional settings.

Several factors must be considered when interpreting the results of this study. This jail population is not representative of all penal institutions. The jail predominantly houses inmates with sentences of one year or less, and some inmates have only been charged and are awaiting trial. The latter may be released from court, or be convicted and incarcerated in other facilities catering to those with longer sentences. Some of the jail population is transient; for example, in July a total of 1,442 inmates were incarcerated, although the jail only held about 800 inmates on a daily basis. A cross-sectional survey of inmates, such as those tested on 25 August 1993, may underrepresent the population of transient inmates housed in any month. Combining the inmates tested on 25 August 1993 with inmates who had been incarcerated in July, and inmates tested in September who were not previously tested, may help redress to this situation.

The demographic characteristics of the study sample were similar to those of the cohort of inmates incarcerated for any period of time during July. However, this does not guarantee that the study sample was similar to the cohort in risk factors for TB. Information was not available concerning several possibly important risk factors for TB infection (eg, HIV infection, history of substance abuse, and criminal or incarceration histories). The prevalence of HIV infection is especially important because inmates who are anergic may have a false-negative TST, resulting in an underestimation of the prevalence of TB infection.[13]

The transmission of *M. tuberculosis* in correctional facilities has been documented repeatedly, underscoring the potential benefits of routinely screening inmates at the time of admission and administering preventive therapy to infected persons. Analysis of routinely collected TST data enables predictors of TST positivity to be identified. It also assists in determining population subgroups within which individuals who are HIV positive and TST negative should be considered for anergy screening and preventive therapy.

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Violence Prevention Program Targeting Connecticut Adolescents: Description and Preliminary Results

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ABSTRACT—Recent statistics show that adolescents are increasingly becoming both the perpetrators and the victims of violent crime in our nation. At our institution, we have developed a violence prevention program specifically targeting adolescents. This three-hour workshop utilizes a multimedia style of presenting information that we believe is well suited to young audiences. To date, over 1,000 adolescents from all over the state have participated in our program. In addition to describing the program, we also summarize the results of program evaluations and demographic profiles completed by audience members. Most participants report that the program was successful in educating them about the causes and con-sequences of violent injury and offered them alternatives to violence in resolving difficult situations. It is our hope that the education we provide will translate into fewer violent injuries within the state of Connecticut.

Introduction

IN 1993, homicide was the second most common cause of death among American adolescents (13 to 19 year olds), claiming more than 3,100 lives.[1,2] In that same year, homicide was the most common cause of death for African-Americans that same age.[2] While rates for most other types of injuries have fallen in recent years, homicide rates for young people have increased.[3] Statistics show that young people are more frequently both the perpetrators and the victims of violent crime in our nation.[4] The number of juveniles (< 18 years old) arrested annually for murder nationwide has increased from almost 1,600 in 1970 to over 3,200 in 1992, an increase of over 100%. During that same 22-year span, the percentage of murder victims younger than 19 years of age also rose, reaching 36% in 1992, a new high.[1]

The state of Connecticut has not been immune from the tide of violence perpetrated by and against young people. The number of murders committed in the state increased 24% from 1992 to 1993 alone. Over that same period, the murder rate in the city of Hartford more than doubled, in large part due to a resurgence in gang activity, primarily involving young males.[1] Other cities in Connecticut experienced a similar increase, with murder rates in New Haven and Bridgeport at an all time high.[1] Statewide, almost 20% of persons arrested for homicide in 1993 were under 19 years of age.[1]

Traditionally, our nation's approach to violent crime has been reactive.[4] Immense resources have been devoted toward the task of identifying, prosecuting, and incarcerating the perpetrators of violent crime, with little attention given to violence prevention. Consequently, the jail population nationwide tripled between 1970 and 1990, but crime rates continue to rise. Because of the limited ability of the criminal justice system to stem the tide of youth violence, the 1980s saw a renewed interest in approaching violent injury as a public health problem.[4] These efforts culminated in 1991 with the formation of the National

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Center for Injury Prevention and Control as part of the National Centers for Disease Control. Even before that time, many states had begun to experiment with violence prevention programs targeting high-risk populations, especially adolescents.[5-8]

The purpose of this article is to describe a violence prevention program based at our institution. In the preceding two years, over 1,000 Connecticut adolescents have participated in our program. The data collected during the course of that two-year period will be presented and discussed. It is our hope that the injury education we impart on these young people will translate into fewer violent injuries within our community.

Materials and Methods

Lives At Risk, a violence prevention program targeting adolescents, is based at Saint Francis Hospital and Medical Center, a level one trauma center in the city of Hartford. The three goals of this program are, first, to give young people an understanding of the potential physical consequences of violence, second, to have young people understand why fights begin and how they escalate, and, finally, to offer alternatives to violence in resolving difficult situations.

The program is divided into three parts. First, we begin in the hospital amphitheater with a discussion of the circumstances under which violent injuries occur. The roles of alcohol, drugs, and firearms are emphasized. Also stressed is the fact that most murder victims are acquainted with their assailant, and that the primary cause of homicide in this country is argument, not robbery. The second part of the program is a tour through our hospital's trauma room. Here, emergency department nurses will carry out a mock trauma resuscitation using one of the students present as the victim (Fig. 1). Various pieces of resuscitation equipment are demonstrated and passed out for the young people to hold. The idea that one could suffer a permanent disability is reinforced by a short film about young people living with the long-term consequences of spinal cord injury. The final part of our program involves a theater group that acts out scenes of young people arguing, with the confrontation escalating just to the point of violence (Fig. 2). The action is then stopped, giving audience members a chance to discuss what could have been done differently to avoid a violent confrontation. The scene is then repeated with different endings that demonstrate peaceful resolution of the conflict.

Data are collected from the students both at the beginning and at the end of the program. At first, a questionnaire is distributed to all students to collect demographic infor-

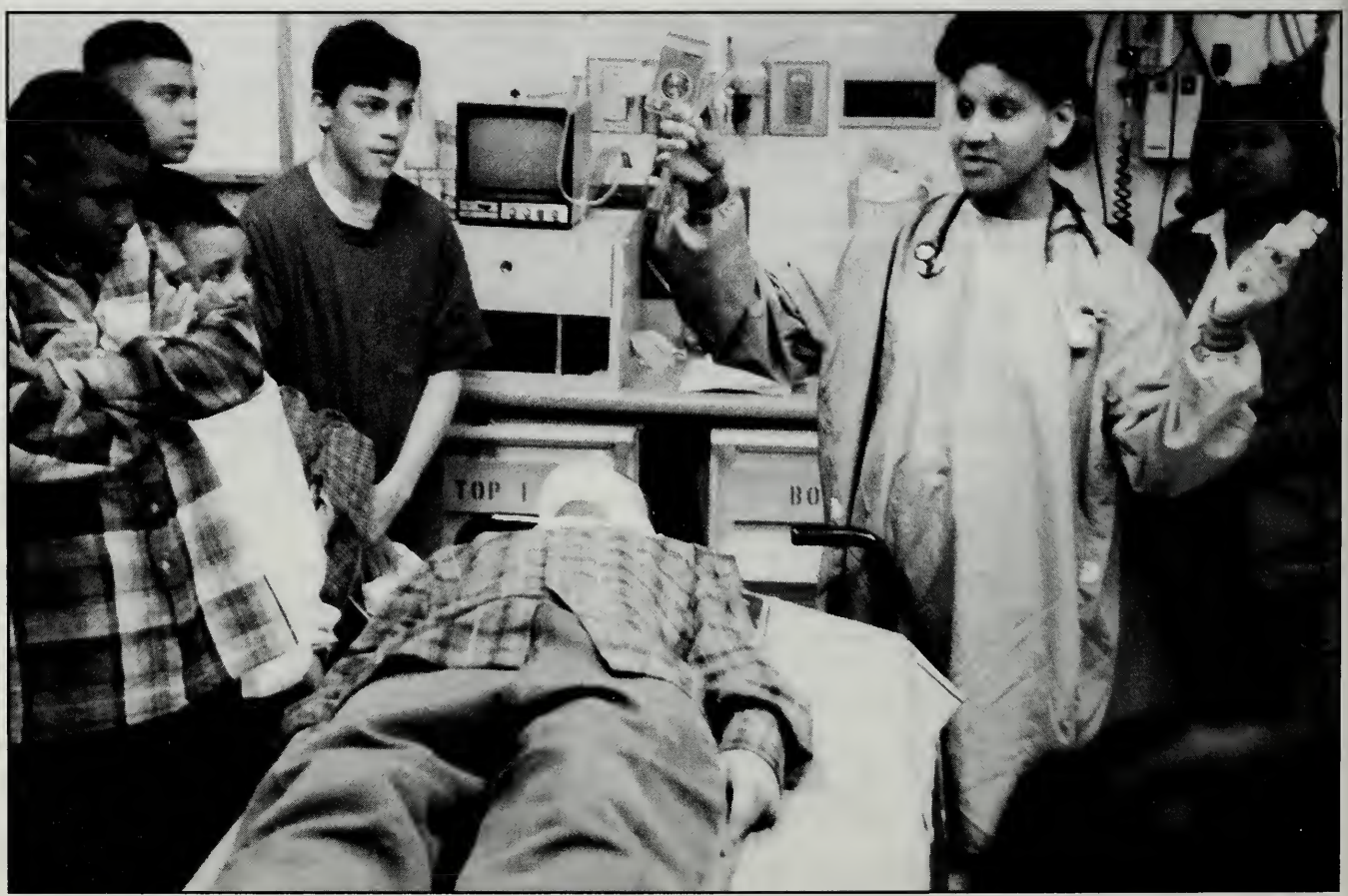

Figure 2.—An emergency department nurse demonstrates the use of resuscitative equipment to a group of Connecticut young people.

Figure 2.—A theater group featuring teenage actors is utilized to demonstrate peaceful means of resolving difficult situations.

Table 1.—Summary of Results From Lives At Risk Program Evaluations

Statement	*Disagree/ Strongly Disagree*	*Neutral*	*Agree/ Strongly Agree*
1. This program has added to my understanding of the causes and consequences of violent injury.	64/1,019 (6.3%)	104/1,019 (12.2%)	831/1,019 (81.5%)
2. This program has heightened my awareness of the fact that I might become a victim of violent injury.	100/1,019 (9.8%)	150/1,019 (14.7%)	767/1,019 (75.5%)
3. Lives At Risk has helped me to better understand the effects of violence on victims, family, friends, and society.	40/1,019 (4.0%)	150/1.019 (14.7%)	819/1,019 (81.3%)
4. Lives At Risk has provided me with information that I feel comfortable sharing with my friends.	120/1,019 (11.8%)	181/1,019 (17.7%)	718/1,019 (70.4%)
5. The videotaped interviews with injured young people was helpful and appropriate.	214/1,019 (21.1%)	160/1,019 (15.7%)	647/1,019 (63.2%)
6. The theater group succeeded in demonstrating realistic, nonviolent ways of handling difficult situations.	83/1,019 (8.1%)	153/1,019 (15.0%)	783/1,019 (76.9%)

mation and to survey the students as to their own attitudes towards and experiences with violence. All of the questions are in a multiple-choice format. Only completed questionnaires were included in the final analysis of information. A questionnaire was considered to be complete if all questions were answered and there was only one answer per question. At the end of the program, all students are asked to fill out a program evaluation. This evaluation consists of six statements concerning the program, to which the students have a range of possible responses from strongly agree to strongly disagree. Space is also provided for the students to write in any suggestions that they might have on how the program could be improved. Only those evaluations that were fully completed were considered in data analysis. The specifics of this evaluation tool and the results we have obtained from them are discussed below.

Results

In the preceding 24 months, over 1,000 Connecticut adolescents have taken part in our program. These middle and high school students ranged in age from 12 to 18 years old and came from cities all over the state. We have hosted groups of all racial, ethnic, and economic backgrounds, reflecting the diversity that characterizes the population of our state.

Of the more than 900 preprogram questionnaires available for review, 715 were judged to be complete and were considered for analysis. Of those surveyed, 61% (436/715) reported that they worry about becoming a victim of violent crime. Also, 54% (386/715) reported that they had personally witnessed a violent act being committed. These ranged from child abuse to robbery and assault. Twenty percent reported that they had access to a gun in their own home, with many more (33%) responding that they could get a gun if they so desired. In a smaller study, 211 students were asked if they themselves, or their friends, had ever belonged to a gang. Eight percent (17/211) replied that they themselves had belonged to a gang at one point in their lives and 18% reported that they had friends who were or who had been gang members.

Of the 1,095 program evaluations available for review, 1,019 were considered to be complete and were included in data analysis. The results of these surveys are summarized in Table 1. The vast majority of those responding felt that the program was successful in educating the audience about the causes of and the consequences of violent injury. Eighty-two percent (831/1,019) agreed or strongly agreed with this statement, compared with only 6% (64/1,019) that disagreed or strongly disagreed. When asked about the effectiveness of the theater group, 77% agreed or strongly agreed that this form of presentation had succeeded in demonstrating nonviolent means of handling difficult situations.

Also shown in Table 1 is that 70% of students agreed or strongly agreed with the statement that they felt comfortable discussing what they had learned in our program with their friends. Only 12% disagreed or strongly disagreed with this statement. Other statements in the survey measured whether audience members thought that they could become victims of violent injury and if they felt as if the program had left them with a better understanding of the effects of violence not only on victims but on the families and friends of victims as well (See Table 1).

Discussion

Violence in our society has reached epidemic proportions and certainly no group has suffered more than our nation's adolescents. Young people, aged 13 to 19, are the only segment of the population with an increasing mortality.[9] The vast majority of these deaths are due to homicides and motor vehicle accidents, and are thus preventable.[10]

The last decade has seen the beginning, by our nation's public health professionals, of programs of injury prevention.[4] Underlying this public health approach is a strong conviction that violence can be prevented. This approach begins with data collection to characterize the problem and to identify the risk factors associated with it. Upon reviewing the available statistics relating to homicide in our nation, several facts stand out as especially relevant to the cause of violence prevention. First, of the more than 14,000 solved murders committed in 1993, the offender was known to the victim in 77% of cases (as a relative, friend, acquaintance, etc.). Only 23% of the time was the killer a complete stranger.[1] Second, of the almost 17,000 murders committed that year, in which the circumstances of the killing were known, in only 26% of cases was the homicide some part of a felonious activity (a crime in progress). Instead, the vast majority of murders occurred as a result of an argument that got out of control.[1] Finally, 70% of all homicides in 1993 were perpetrated with some form of firearm.[1]

Given that we have only three hours with our audience, we have to be selective in what information is presented. We want the students to leave with the knowledge that argument is the most common circumstance in which murder is committed, that frequently one or both parties will be under the influence of alcohol, and that a gun is often involved. With this information, we believe that the adolescents will be more apt to recognize a potentially violent situation before somebody is actually hurt. Once these points have been made, we demonstrate to our audience alternative ways of resolving arguments nonviolently, using the theater group as previously described.

In addition to what we say, serious consideration has been given to how we say it. The program is designed to communicate information to adolescents, the population

most at risk. To facilitate this communication, we have adopted a style of presentation that we feel is most likely to be appreciated by this age group. Our goal is for our audience members to remember the few key pieces of information described above after they have left. These few facts are repeated several times during the program in different ways that require the utilization of several different senses (sight, sound, and touch). As an example, the notion that there are alternative ways of resolving difficult situations without resorting to violence is made more real by witnessing a theater group act out scenes where these methods are actually used. In addition, discussions are made as interactive as possible, with the audience members doing most of the talking. For the students, this keeps the program interesting and relevant. The success of this technique in communicating information is reflected in the high marks given to the program in the evaluation forms.

This type of self-reported evaluation has, however, several inherent limitations. First, surveys represent opinions rather than direct observations. Second, the investigators must rely on the respondents to answer honestly and correctly. Third, the survey instrument must be carefully constructed so that it will be understood and properly completed by the respondents.[10-11] In this case, 35% of demographic questionnaires (380/1,095) were improperly or incompletely filled out. This raises the possibility for bias related to limited response rates. In the case of our program evaluations however, 93% of audience members turned in a completed evaluation (1,019/1,095), so that the possibility of bias due to incomplete responses was less of a concern.

Further limitations of our survey mechanism should be mentioned. What we are sampling is the attitude of the students towards violence and towards our program at a single point in time, namely at the conclusion of the program. We have at present no way to show that three or six months after the program the healthy respect for violent injury that we try to impart is still in place. Also, our survey does not test for knowledge relating to violent injury. We cannot prove, for example, that students retained the facts we tried to teach them, such that most homicides occur in the context of an argument. Most importantly, we cannot say that students participating in our program will be less likely to be the victim or perpetrator of a violent act. All we can say at the present time is that our program has been successful in making adolescents more aware of the causes and consequences of violent injury and in providing at least a suggestion of how such situations might be avoided.

Future efforts will seek to build on these encouraging preliminary results. Our next step will be to expand our data collection to include a second demographic profile administered three months after the students complete the program. This will show us if the effects of the workshop are retained after the students have left. In addition, both questionnaires (one before the program and one three months afterward) as well as the program evaluation will be modified to test for injury knowledge as well as attitude. Four knowledge questions will be included in all of these documents to try and prove that we have improved the student's knowledge of violent injury compared with when the program began.

We are also exploring the possibility of including younger children in our program. A careful review of the demographic profiles will tell us if middle school children are already at significant risk for suffering violent injury. If this is so, then we need to start educating children about the causes and consequences of violence at an earlier age. Many public health professionals have advocated incorporating violence prevention into the health curriculum of grade school children.[4,6,9] Ultimately, a case-control or cohort study will be needed to prove definitively that the students who pass through our program are at lower risk of suffering violent injury.

As the new century approaches, the challenge of preventing violence-related injury remains a formidable one. Clearly, there is no "magic bullet" forthcoming quickly and conveniently to solve this problem. Only with commitment to new and innovative policies that center their efforts on injury prevention will we be able to halt this epidemic of violence that claims so many young lives each year.

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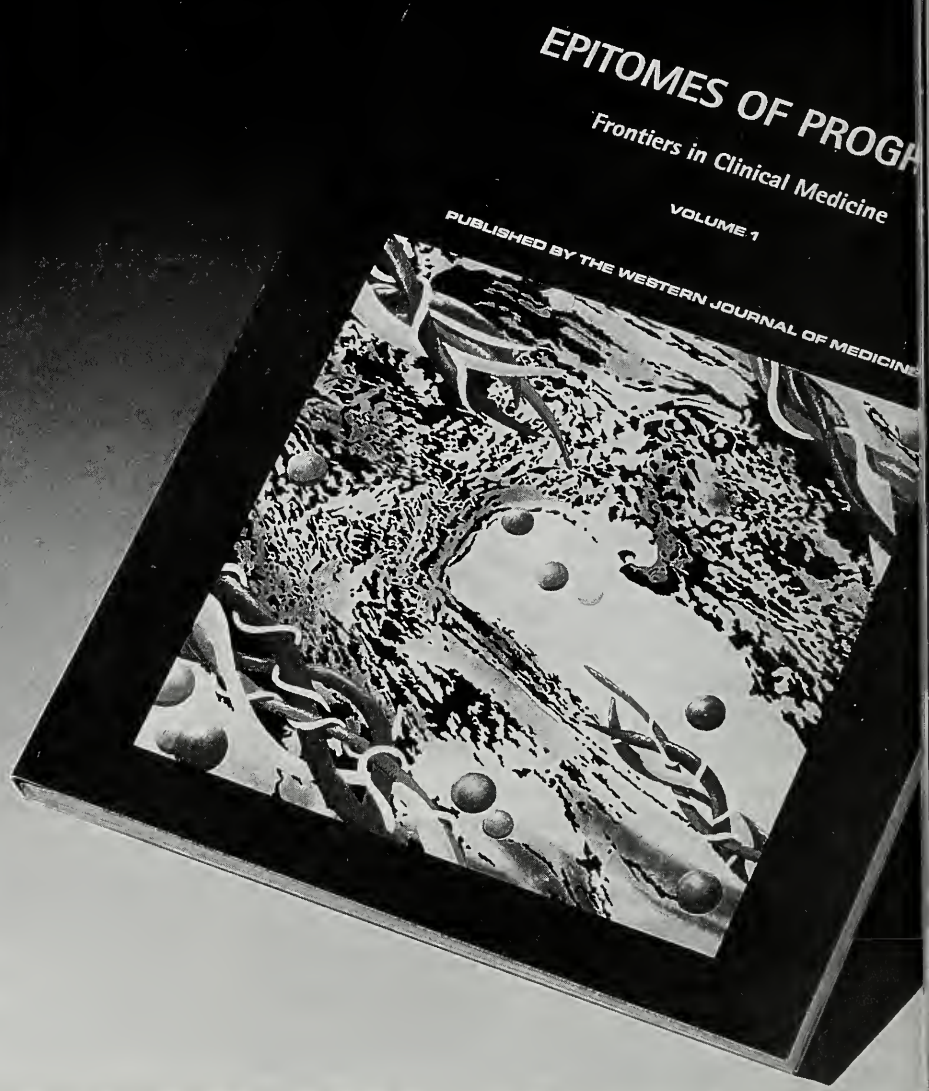
epitome

i-′pit-ə-mē\ *n* [L, fr. Gk *epitomē*, fr. *epitemnein* to cut sh fr. *epi-* + *temnein* to cut — more at TOME] (1520) **1 a** summary of a written work **b** : a brief presentation or st ment of something **2** : a typical or ideal example: EMBO MENT (the British monarchy itself is the ~ of tradition Richard Joseph) **3** : Plural — *Epit-o-mes* — A reg FEATURE of *The Western Journal of Medicine*, now availabl a single, bound volume.



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Important Advances in Clinical Medicine

Allergy and Immunology

Daniel C. Adelman, M.D. and Alan Goldsobel, M.D., Section Editors

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in allergy and immunology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Allergy and Immunology of the California Medical Association, and the summaries were prepared under the direction of Drs Adelman and Goldsobel and the panel.

Steroid-Resistant Asthma

RECENT studies demonstrate the importance of airway inflammation and immune activation in the pathogenesis of asthma. Glucocorticoids are the most potent anti-inflammatory therapy commonly used in this disease. Certain patients with asthma in whom occult sinusitis, gastroesophageal reflux disease, and environmental allergen exposure have been excluded still fail to have a satisfactory response even to combined inhaled and parenteral glucocorticoid therapy, and their asthma is considered "steroid-resistant." Many of these patients continue treatment with glucocorticoids despite having serious adverse effects and poor clinical response. It is important to differentiate these patients early because they may benefit from alternative approaches to treatment.

Patients with a morning baseline (before bronchodilator use) forced expiratory volume in one second (FEV_1) of less than 70% of the predicted value have steroid resistant asthma if their morning prebronchodilator FEV_1 value fails to improve by 15% or more after a two-week course of oral prednisone (40 mg per day). In contrast, people whose asthma is steroid-sensitive and who have similar baseline FEV_1 values frequently will have an increased FEV_1 by 30% or greater after prednisone treatment. Patients with a history of steroid resistance should be carefully assessed for misdiagnosis, poor inhaler technique, noncompliance to medications, pharmacokinetic abnormalities in steroid absorption or elimination, persistent allergen exposure, or psychological disorders. Even after these confounding factors in asthma therapy are excluded, a small subset of patients remain whose asthma is poorly responsive to steroid use.

Studies of the peripheral blood and bronchoalveolar lavage (BAL) cells from patients with asthma reveal the presence of persistent eosinophilia and T-cell activation despite treatment with high-dose prednisone. Furthermore, BAL cells from the airways of patients with steroid-resistant asthma have a distinct pattern of cytokine gene expression and response to prednisone that differs from those found in patients with steroid-resistant asthma. Both before and after prednisone therapy, BAL cells from patients with steroid-resistant asthma have a substantially higher level of interleukin (IL)-2 and IL-4 gene expression than BAL cells from those with steroid-sensitive asthma.

Although there is a spectrum of glucocorticoid receptor-binding abnormalities in all patients with chronic asthma, patients with steroid-resistant asthma have the most extreme abnormality in their glucocorticoid receptors. Most patients with steroid-resistant asthma present with severe side effects from parenteral steroid therapy

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and a lack of benefit. Furthermore, their morning cortisol levels are generally suppressed by steroid therapy. T cells from most of these patients have a glucocorticoid receptor-binding defect that reverses in culture. This "type I" defect is sustained in vitro by the presence of the combination of IL-2 and IL-4 and is thought to be an acquired defect. A second, less common group of patients with steroid-resistant asthma present with a history of no side effects from high-dose steroid therapy. These patients have normal glucocorticoid receptor-binding affinity but a markedly reduced number of glucocorticoid receptors per cell. The glucocorticoid receptor abnormality in "type 2" steroid-resistant asthma is irreversible and does not respond to coincubation with a combination of IL-2 and IL-4. These patients seem to have a primary steroid-resistance syndrome.

Most patients with steroid-resistant asthma have the acquired form of this disorder. A number of factors can contribute to the development of steroid resistance. The overuse of certain drugs, particularly inhaled β-agonists, can reduce steroid responsiveness. Inflammation and immune activation are likely to play a key role in altering glucocorticoid receptor binding and, therefore, steroid responsiveness. In this regard, cytokines can induce transcription factors that directly interact with glucocorticoid receptors and interfere with their ability to bind to DNA.

The degree of change in glucocorticoid receptor binding affinity may be related to the magnitude of airway inflammation.

Although patients with steroid-resistant asthma may respond to extremely high-dose glucocorticoid therapy, recent studies have identified several promising treatment regimens as alternatives to parenteral glucocorticoid therapy. Rigorous clinical trials will be needed to evaluate these potential therapies, which include the newer generation of inhaled steroids (such as budesonide and fluticasone propionate), cyclosporine, and intravenous γ-globulin therapy. Characteristic of these treatments is the variable response observed among patients. An understanding of the mechanisms by which glucocorticoids and alternative drugs fail to resolve inflammation in asthma may provide important insights into the pathogenesis of chronic asthma and result in a rational design of innovative and more effective treatment approaches.

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Effectiveness of Allergy Immunotherapy for Asthma

ALLERGY immunotherapy is the technique of administering increasing doses of an extract of specific allergens that, on natural exposure, cause allergic patients to respond with allergic symptoms. The goal of this therapy is to alter patients' immunologic response to specific allergens and thereby ameliorate symptoms. Allergy immunotherapy has been practiced since 1911; in numerous double-blind, placebo-controlled studies, it has been shown to be effective management of allergic rhinitis and hymenoptera (insect venom) sensitivity. The results of controlled studies of allergy immunotherapy in patients with asthma have been less clear, partly due to the subjectivity of symptoms used to measure improvement. Recent research has focused on objective assessments of improvement, the mechanism of action, and cost-effectiveness, which has added new weight to the evidence favoring immunotherapy for this disorder.

Clinical studies in animal-induced asthma have shown lessening of overall symptoms and a delay in the onset of symptoms. In addition, following immunotherapy with cat allergens in patients with cat-allergic asthma, specific sensitivity was substantially reduced. Nonspecific bronchial reactivity to histamine was also decreased. Similarly, studies involving house dust mites have also shown clinical improvement and a reduced bronchial response to challenge with dust mite extract. In addition a significant reduction has been shown in the late response to bronchial challenge (four to eight hours after challenge, a cellular and inflammatory infiltrate is produced that is responsible for chronic asthma).

Clinical studies with pollen have also shown clear clinical improvement. A recent five-year, double-blind, placebo-controlled study of allergy immunotherapy in patients with asthma to ragweed, sponsored by the National Institute of Allergy and Infectious Diseases, demonstrated improvement in patients who were immunized against ragweed; they had reduced clinical symptoms, skin test sensitivity, immunoglobulin-E measurements, and nonspecific bronchial sensitivity to methacholine and bronchial provocation tests when compared with placebo-treated control patients.

Several double-blind, placebo-controlled trials of immunotherapy for grass pollen allergy have shown that there is a pronounced reduction of the characteristic $CD4^+$ T-cell and activated eosinophil cellular infiltrates during the late-phase response. In addition, allergy immunotherapy appears to induce a "switch" from a "proallergic" T-cell phenotype (TH-2) to an "allergy-suppressing" T-cell phenotype (TH-1).

Allergy immunotherapy adds about $2.12 per day to the first-year cost of therapy, but only $0.47 per day in the subsequent years. These modest increases in cost are more than offset by savings from reduced medication costs and are associated with substantially reduced morbidity and mortality.

Allergy immunotherapy in selected patients with allergic asthma, using well-characterized standardized antigens, has been shown by objective measures to he effective clinically and cost-saving. In the final analysis, the selection of patients for immunotherapy must be dictated by the severity of the disease, the ineffectiveness of environmental controls, the necessity for frequent medications, and the potential, although small, for a systemic reaction to the immunotherapy itself.

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Changing Face of HIV/AIDS Care—Mother-Fetal and Maternal-Child HIV Transmission

HUMAN immunodeficiency virus (HIV) disease is now the leading cause of death in adults aged 25 to 44 years in the United States. The World Health Organization continues to predict that 30 to 40 million persons will be infected with HIV by 2000. Globally, heterosexual transmission remains the predominant mode of spread. In the United States, epidemiologic studies reveal that HIV is increasingly prevalent in heterosexuals, racial and ethnic minority groups, women, poor people, and adolescents. More than 20,000 women in the United States have the acquired immunodeficiency syndrome (AIDS). Each year in the United States, 7,000 HIV-infected women give birth, and 25% of these infants become infected with HIV; AIDS is now the fifth leading cause of death in U.S. children younger than 15 years. The recently completed AIDS clinical trial group study (ACTG076) evaluated the efficacy and safety of zidovudine in preventing maternal-fetal transmission in pregnant women with $CD4^+$ counts higher than 200×10^9 per liter (200 cells per mm^3). Administering zidovudine during pregnancy and delivery, as well as to infants during the first six weeks of life, reduced the risk of transmission by 66% ($P < .001$). The Food and Drug Administration has approved the use of zidovudine during pregnancy as a strategy to prevent vertical transmission. The U.S. Public Health Service's official report summarized the study results, discussed limitations of the data, and issued recommendations for the use and monitoring of zidovudine during pregnancy. The long-term risks of fetal and neonatal zidovudine use are unknown.

Several factors, including high maternal viral load, prolonged rupture of membranes, and breast-feeding, increase the risk of vertical transmission. Recent reports on maternal viral load help to explain why, in general, only about 25% of pregnancies in HIV-infected women result in HIV-infected offspring. Determining the viral burden during pregnancy may identify women at highest risk and help direct counseling and treatment strategies. Quantitative polymerase chain reaction and other new methods of measuring the viral burden may be more powerful predictors of transmission than $CD4^+$ quantification or viral culture methods, but these are still being evaluated for clinical reliability.

Breast-feeding is also linked to vertical HIV transmission. Cases of AIDS have been reported in children whose mothers were infected by postpartum transfusions of HIV-infected blood. The transmission of the virus to the infant was thus thought to be related to breast-feeding during maternal primary infection when viral burden is extremely high. In developing countries, the benefit of breast-feeding, such as reduced infant mortality from diarrheal and other illnesses, is considered to offset the risk of HIV transmission. In the U.S., breast-feeding by HIV-seropositive women is strongly discouraged.

From the recent advances in maternal screening, viral quantification, and understanding of the predictors of transmission have emerged an encouraging picture of decreasing maternal-infant HIV transmission. Results from antiviral drug trials and epidemiologic reports, coupled with new technologies for quantifying viral load, provide

us with a clearer image of the changing face of HIV infection and AIDS.

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Occupational Exposure to Latex

LATEX is the milky sap that is harvested from the rubber tree *Hevea brasiliensis.* During the manufacturing of latex products, many compounding agents are added. Adverse reactions to natural rubber products were first attributed to these added substances. Indeed, hand dermatitis to latex gloves, first reported 60 years ago, is usually a delayed (type IV) hypersensitivity reaction to thiuram or other additives. Evidence for immunoglobulin (Ig) E-mediated (type I) reactions to protein antigens in latex itself were first documented 15 years ago, and since then the incidence of such reactions has increased dramatically. This has been attributed to the implementation of universal precautions for infectious diseases that have greatly increased the use of latex gloves and apparently increased the antigenicity of latex products due to alterations in manufacturing to increase production. The amount of antigen in latex gloves is highly variable, ranging from 1 to 2,700 mg per gram. The most important factors in lowering the allergen content are leaching and steam sterilization. Laboratory studies have identified many possible antigens in latex, two in particular of 14.5 and 24 to 30 kd in size. The cornstarch used in latex gloves is itself nonallergenic, but latex particles can adsorb to the starch and become aerosolized, facilitating exposure.

The clinical presentation of latex allergy is variable and depends on the amount of available antigen in the product and the form of exposure. Reactions to gloves can be localized contact dermatitis or urticaria, but systemic urticaria and anaphylaxis have been reported. The most severe reactions to latex proteins have been associated with parenteral or mucosal contact, such as intraoperative exposure to gloves or gastrointestinal, oral, or genital mucosal exposures during barium enema or dental procedures.

Immunoglobulin E-mediated occupational reactions to latex products have been recognized since 1988. In one study of 57 health-care workers and 67 other workers with occupational exposure to latex, the following symptoms were reported: contact urticaria in 79% of health-care workers *vs* 72% of other workers, hand eczema in 42% vs 64%, conjunctivitis in 28% *vs* 16%, rhinitis in 16% *vs* 13%, facial edema in 14% *vs* 28%, generalized urticaria in 9% *vs* 13%, asthma in 2% *vs* 4%, and anaphylaxis in 7% *vs* 10%. Occupational allergy to latex antigen has been reported in surgeons, nurses, dentists, pharmacists, and radiology and other medical technicians. Recent surveys have found that 10% to 17% of all hospital personnel, 7.4% of surgeons, and 5.2% to 10.7% of operating room staff are sensitive to latex.

The usual progression of symptoms seen in latex-allergic health- care workers is first contact dermatitis or localized urticaria, and then systemic symptoms—generalized urticaria, rhiuitis, asthma, and, rarely, anaphylaxis. Some nonmedical professions that involve latex exposure are kitchen work, the rubber industry, or the manufacture of rubber products such as toys, gloves, and rubber bands. The prevalence of latex allergy in these groups is less well known, but one recent study in a latex glove plant showed sensitization in 11% of workers.

The diagnosis of IgE-mediated latex allergy can be confirmed by skin prick or radioallergosorbent testing (RAST). There are currently no standardized commercial extracts for skin testing available in the United States, but such products are available in Canada and Europe. Several latex RAST allergens are available. Older RAST methods had only a 60% to 65% sensitivity rate, but newer tests recently approved by the U.S. Food and Drug Administration have higher sensitivity rates.

Preventing occupational exposure of health-care workers requires the use of nonlatex, low antigen-containing or powder-free gloves and latex substitutes for nonglove products. In operating rooms, the airborne latex allergen level can be high enough to cause respiratory symptoms in highly sensitized workers and patients. A future goal is the production of rubber products that have no or very low allergenicity.

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Value of Home Peak Flow Monitoring for Asthma Control

HOME peak flow monitoring is recommended by the National Heart, Lung, and Blood Institute's National Asthma Education and Prevention Program: Guidelines for the diagnosis and management of asthma for all patients with asthma who are aged five years and older. The guidelines suggest that measuring peak flow is necessary in the management of asthma, in much the same way that blood pressure monitoring is necessary to manage hypertension and blood glucose monitoring is necessary to manage diabetes mellitus. Yet, controversy and resistance surround the use of home peak flow monitoring for the management of asthma. Many physicians consider it burdensome, unreliable, and of questionable value. Others find that they lack the training to effectively use the daily measurement records their patients bring them.

The peak expiratory flow rate is the fastest flow rate that can be sustained for 10 milliseconds during a maximal expiratory effort after full inspiration. The value obtained, in liters per minute on a home peak flow meter, is effort-dependent and, when a maximal effort is made indicates the caliber of large airways. Peak flow is abnormally decreased only in patients with moderate to severe airway obstruction. Except when extremely low, absolute values are an unreliable guide to the severity of airflow obstruction because the range of peak flow is not linear in its clinical importance. A change of 100 liters per minute is more relevant at the lower end of the scale than at the upper end; but trends within individual patients are valuable over time.

Home peak flow monitoring is not without pitfalls, as the measure is effort-dependent, requiring a maximal expiratory effort. To increase the reliability of measurements, patients are instructed to make three maximal attempts and record the highest value. Performance technique may wane with time, however, and the best approach is to have the patient demonstrate the peak flow expiratory maneuver at each office visit. Other problems include inaccurate reading or recording and fungal growth inside the meter. The greatest pitfall of the current meters is their reliance on consistent and accurate patient self-measurement. Compliance can become a problem if the patient sees no value in making the daily measurements. Similarly, if patients are asked to make measurements and fill out diaries without being told what the numbers mean and what to do in response, compliance decreases considerably with time. Only when peak flow monitoring is tied to action plans that require the patient to understand the value and self-manage the illness do results improve.

When patients use peak flow measurements, both compliance and clinical outcomes appear to improve. Health-care professionals must understand and explain clearly the implications of peak flow values for individual patients. When records indicate that a peak flow value has fallen substantially, the opportunity should be taken to explore the history of that event and to teach the patient the correct and most appropriate actions to take. When patients have taken appropriate action, it is important to use the opportunity to provide positive reinforcement. The directions for actions to take to manage asthma exacerbations must be explicit and specific to a person's clinical profile. For example, when a peak flow value falls to a predetermined level, the patient should be instructed to use rescue medication.

There are several possible advantages of home peak flow monitoring. Episodes of airflow obstruction, for which treatment is indicated, can be identified. Patterns of peak flow that suggest increased risk, such as morning dips or wide diurnal variation, can be documented. By matching objective measurements to subjective sensations, symptom recognition may be enhanced, especially in those with a poor perception of airflow obstruction. Home monitoring allows peak flow-guided self-management using self-adjusted medications—a true partnership approach between professional and patient. Finally, peak flow monitoring may result in more appropriate, less frequent, use of inhaled β-agonist rescue medication.

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Caution With Inhaled Corticosteroids in Childhood Asthma

THE use of inhaled corticosteroids for the treatment of childhood asthma is increasing for almost all degrees of severity. The corticosteroid aerosols available in the United States for asthma (beclomethasone dipropionate, triamcinolone acetonide, and flunisolide) are all highly effective. Nevertheless, many physicians are reluctant to use them, especially in children, because of uncertainty and controversy regarding the associated risk.

Only 10% to 15% of inhaled corticosteroids administered by a metered-dose inhaler is deposited in the lungs. Most of each dose is deposited in the posterior pharynx and mouth and is ingested and variably absorbed through the gastrointestinal tract. Inhaled corticosteroids are also absorbed directly through the lungs. Nasal delivery of topical corticosteroids for rhinitis may also contribute to systemic absorption.

Although there has always been a concern of increased susceptibility to infection with the use of inhaled corticosteroids, 20 years of experience, particularly with beclomethasone dipropionate, has shown that the incidence or severity of viral or bacterial infections in immunocompetent patients is not increased. Caution should be used, however, in children who are immunocompromised or who have tuberculosis or other chronic infection of the lungs.

Oropharyngeal or laryngeal candidiasis or dysphonia due to local effects on laryngeal muscles can complicate inhaled corticosteroid therapy. It is uncommon to need to discontinue treatment of these complications, however. Mouth rinsing after dosing and the use of a spacer device are effective remedies for these local problems.

The use of oral corticosteroids is well established as a cause of growth retardation in children, so their use in this population has been closely monitored. Data from several long-term clinical trials have shown no effect on growth in asthmatic children at doses of less than 800 mg per day. Exceptions to this include recent reports of a reduction in lower leg growth over a short-term period of treatment with 800 mg per day of budesonide and a decrease in growth velocity in prepubescent boys using 400 μg per day of beclomethasone diproprionate. Examining the effect of inhaled corticosteroids on growth in children, however, is complicated by studies showing that severe asthma without inhaled corticosteroid therapy can be associated with delayed puberty and growth rates and that growth velocity may not correlate with final adult height.

Alterations in bone metabolism leading to osteoporosis after long-term inhaled corticosteroid use is also a possible concern. Inhaled corticosteroids clearly have an effect on bone metabolism when sensitive markers of biochemical bone turnover and deposition (such as urinary hydroxyproline, osteocalcin, or alkaline phosphatase) are measured. Reduced bone mineral density has been noted in adults, but not children, on long-term inhaled corticosteroid therapy, although results have often been complicated by the concomitant administration of oral corticosteroids. To date, there is no information to suggest that treatment solely with inhaled corticosteroids leads to clinically important osteoporosis or fractures.

Inhaled corticosteroid therapy can lead to alterations in hypothalamic-pituitary-adrenal axis function at almost any dose when sensitive markers are examined. But only rare anecdotal reports of problems of clinical insufficiency or Cushing's syndrome have been published. The morning serum cortisol value is rarely affected by inhaled corticosteroid use unless the dose is high. The clinical meaning of alterations in more sensitive HPA axis markers is unknown. Thus, steroid replacement therapy for children on inhaled corticosteroid therapy who are undergoing a surgical procedure is not generally necessary.

The different inhaled corticosteroid preparations do have varying degrees of systemic absorption, but whether these differences in systemic bioavailability have any clinical relevance with regard to toxicity at conventional doses is still not known. The trend toward the use of higher doses of inhaled corticosteroids may make these differences more important because the systemic effects are dose related. Children can vary widely in their susceptibility, probably because of intrinsic differences in pharmacokinetics and end-organ sensitivity. Inhalation technique, the use of a spacer, mouth rinsing, and dosing frequency are other determinants that likely contribute to the systemic effects of inhaled corticosteroids.

We can expect recommendations in the future for more aggressive use of inhaled corticosteroids for children with allergic disease. The systemic problems of inhaled corticosteroids in most patients on low to moderate conventional doses are inconsequential. Higher doses are more effective but also more active systemically. When compared with the use of oral steroids, the trade-off is likely still in favor of high-dose inhaled corticosteroids. The actual adverse systemic effects from the long-term use of intermediate- or high-dose inhaled corticosteroids in children is still unknown, and this must be kept in mind when prescribing prolonged inhaled corticosteroid therapy in this population.

Until more information is available, the following recommendations or precautions should be followed with inhaled corticosteroid treatment in children:

- Use the lowest effective dose of inhaled corticosteroids, preferably below 800 μg per day (some asthma experts recommend beginning treatment with a nonsteroidal anti-inflammatory medication such as cromolyn sodium or nedocromil);
- Use other nonmedical approaches, such as environmental control measures and immunotherapy, if indicated, in an attempt to keep the total inhaled corticosteroid dose as low as necessary;
- Use a spacer device with all inhaled corticosteroid preparations to help reduce oral deposition and systemic absorption;

- Rinse mouth well after every dose; and
- Monitor growth carefully (height and weight) over ime.

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Long-Acting β_2-Agonists and Their Role in Asthma Management

TWO long-acting β_2-agonists have been well studied, salmeterol (a derivative of albuterol), which became available in the United States in 1994, and formoterol, which is still under investigation. Both have prolonged bronchodilating activity of at least 12 hours, but formoterol has a five-minute onset of action compared with 15 minutes for salmeterol. Affinity for the β_2-receptor is greater with salmeterol than with albuterol but less than with formoterol; salmeterol is uniquely β_2-specific. Inhaled salmeterol has been shown to be effective for at least 12 hours in preventing bronchoconstriction induced by methacholine, histamine, exercise, allergen, and hyperventilation of cold air.

Reports conflict about whether salmeterol provides anti-inflarnmatory protection in addition to bronchodilatation. Recent studies suggest that although, like other bronchodilators, salmeterol can block the early phase response to allergen challenge, it only partially inhibits the late allergic response that best correlates with bronchial hyperreactivity and chronic inflammation. Bronchoalveolar lavage fluid after several weeks of salmeterol treatment does not show a reduction in inflammatory markers.

Compared with the use of albuterol (180 μg 4 times a day), the use of salmeterol (42 μg twice a day) has repeatedly been shown to result in superior control of day and night asthma symptoms, higher peak flow measurements and forced expiratory volume in one second, and less need for the use of a rescue β_2-agonist. It has been particularly impressive in preventing nocturnal and exercise-induced asthma for as long as eight to 12 hours. The use of salmeterol has resulted in improved asthma control even in patients receiving modest doses of inhaled corticosteroids (400 μg per day of beclomethasone).

Concern has recently arisen regarding a purported deterioration of asthma control in patients using inhaled β_2-agonists daily. A study of patients with asthma on daily inhaled salmeterol therapy for 12 months showed no deterioration of asthma control and no change in responsiveness to inhaled albuterol. But several studies have suggested that a prolonged administration (eight weeks) of salmeterol leads to tolerance to its protective effects against bronchoconstrictive stimuli such as methacholine and exercise. Finally, several cases of sudden respiratory arrest have been reported in patients on maintenance salmeterol therapy. No cause-and-effect relationship has been demonstrated, however. Revisions in the labeling of salmeterol suggest that salmeterol should not be used to treat acute asthma but only as a maintenance medication twice a day; salmeterol therapy should not be initiated in patients with substantial worsening or acutely deteriorating asthma; and salmeterol is not a substitute for inhaled or oral corticosteroids.

In conclusion, salmeterol is a potent, long-acting, β_2-agonist that may be helpful in patients with moderate or severe asthma who require several-times-a-day doses of a β_2-agonist despite maintenance anti-inflammatory therapy and in patients with nocturnal symptoms. Further studies are needed to clarify the precise indications for salmeterol use in asthma therapy and to further define its safety profile.

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Asthma and Air Pollution

ALTHOUGH the increase in asthma morbidity and mortality has several causes, urban air pollution may have a prominent role. Air pollutants for which there is evidence of possible adverse respiratory health effects at ambient levels include ozone, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter of less than 10 μm in diameter (PM_{10}). Unlike workplace exposure standards that are designed to protect the average healthy worker, the federal ambient air quality standards are designed to protect even the most susceptible members of the general population. Because asthma is characterized

by both nonspecific airway hyperresponsiveness and airway inflammation, persons with asthma are generally considered to have increased susceptibility to the respiratory health effects of inhaled pollutants.

Ozone is an oxidant pollutant that is generated from motor vehicle and other emissions by photochemistry in the atmosphere. A large percentage of the United States population lives in areas where the ozone levels are above the federal standard. Because ozone inhalation by normal subjects causes increased airway responsiveness and airway inflammation, it is somewhat surprising that most controlled human exposure studies have not shown patients with asthma to have greater ozone-induced decrements in lung function than normal persons. Presumably this is because ozone-induced decrements are caused by neuromuscular mechanisms that limit deep inspiration rather than by bronchoconstriction. Epidemiologic studies in Los Angeles, California; Houston, Texas; and Atlanta, Georgia, however, have shown increased rates of asthma attacks when ozone levels are high. A possible mechanism by which ozone exposure might lead to asthma attacks is enhanced sensitivity to inhaled allergen as a consequence of increased airway inflammation. An enhanced immediate bronchoconstrictor response to inhaled allergen after ozone exposure was demonstrated in a study involving a small number of persons with asthma.

The principal source of NO_2 in outdoor air is motor vehicle emissions, but indoor levels often exceed those seen outdoors. The principal indoor source of NO_2 is gas cooking stoves. Like ozone, NO_2 is an oxidant pollutant, although it is less chemically reactive and thus probably less potent. The lack of a short-term averaging time in the current NO_2 air quality standard means that persons with asthma are not thought to be at risk of acute exacerbations after brief exposures. Controlled exposure studies of persons with asthma have produced inconsistent results, with some evidence of a subgroup with increased sensitivity. Limited data from epidemiologic studies of the effect of indoor NO_2 exposure on the risk of respiratory illness in children are also inconsistent.

Sulfur dioxide is an irritant gas that is primarily generated from the burning of sulfur-containing fossil fuel. Sulfur dioxide pollution is much more of a problem in the eastern United States than in the western states. In contrast to ozone, SO_2 has been clearly shown to induce acute bronchoconstriction in asthmatic patients at concentrations well below those required to induce this response in normal subjects. The current air quality standard for SO_2 is not adequately protective of persons with asthma, as there is no question that brief (<1 hour) exposures to low concentrations of SO_2 can induce bronchoconstriction in such persons. A recent study showed that an atmosphere containing both SO_2 and NO_2 increased the immediate bronchoconstrictor response to inhaled allergen in patients with asthma.

Particulate matter is a mixture of substances, often including both solid and liquid particles, particles of biologic origin such as fungal spores and pollens, and particles of varying size and acidity. The 10-μm-in-diameter cutoff of the current federal standard was selected to include only particles of respirable size. The primary sources of fine particulate pollution are power and heavy industrial plants, wood-burning stoves, and diesel-fueled motor vehicles. Although substantial progress has been made in reducing particulate pollution, there are still many communities in which the federal PM_{10} standard is exceeded. Epidemiologic evidence is accumulating that the current standard offers an inadequate margin of safety to protect persons with asthma. Several studies have found a strong correlation between PM_{10} levels and hospital admissions for acute respiratory illnesses (including asthma). A diary study of schoolchildren has documented an association between the PM_{10} concentration and lower respiratory tract symptoms, despite the fact that all PM_{10} measurements were below the current federal standard. Panel studies have also shown decreased peak expiratory flow values and increased use of asthma medications on days with elevated PM_{10} levels.

In summary, there is considerable evidence that persons with asthma are at increased risk of having exacerbations with exposure to ozone, SO_2, and PM_{10} pollution (there is less evidence for NO_2). Persons with asthma should be advised to refrain from exercising outdoors on smoggy days, especially during the afternoons when ozone levels are highest. They also should be advised to reduce exposure to emissions from combustion sources, including agricultural burning and wood-burning stoves or fireplaces. A major reason to continue a strong national effort to maintain outdoor air quality is to protect asthmatic children and adults.

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Genetic Basis of the Primary Immunodeficiency Syndromes

RECENT advances in molecular genetics have led to the mapping and identification of several of the primary immunodeficiency disorders. In the past two years, the specific gene defects of X-linked agammaglobulinemia, a new and rare form of severe combined immunodeficiency (SCID), and the X-linked hyperimmunoglobulin M syndrome were reported.

X-linked agammaglobulinemia was first described in 1952. Mapping studies showed that the defective gene in this disorder was located in the q22 region of the X chromosome associated with coding for the cytoplasmic Bruton's tyrosine kinase (Btk). Protein-tyrosine kinases (PTKs) are critical intermediaries in cellular proliferation and differentiation signals. They act by phosphorylating proteins that regulate the interaction of other constituents in the signal transduction pathway. Recent reported mutations in this gene include a complete deficiency of Btk expression and point mutations that interfere with Btk activity. The identification of these and other mutations in the Btk gene is leading to a greater appreciation of the function of this PTK in B lymphocytes.

Protein-tyrosine kinases also play an important role in signaling of the T-cell receptor. The four PTKs identified in T-cell receptor signaling include Lck, Fyn, Syk, and ZAP70. Investigators recently identified a one-year-old girl with an autosomal recessive form of SCID who had an unusual complete absence of $CD8^+$ T cells. Functional studies revealed an absence of normal triggering of cytoplasmic PTK activity, suggesting a critical defect in T-cell activation. Assays of the individual PTKs known to be involved in T- cell receptor signal transduction revealed a complete absence of the ZAP70 protein. Cloning of the messenger RNA from this patient's cells revealed a 13-base-pair deletion. Two other mutations have been identified in an unrelated family with children showing a ZAP70 protein deficiency and similar clinical symptoms. The ZAP70 gene has been mapped to chromosome 2, which is consistent with the autosomal recessive inheritance pattern of the defect.

The third primary immunodeficiency for which the gene defect has been recently identified is the X-linked hyperimmunoglobulin M syndrome. Patients with this syndrome fail to produce normal amounts of immunoglobulin (Ig) E, IgA, or IgG, and despite elevated quantities of IgM, their immune system is seriously compromised. Investigators in the early 1990s discovered the CD40 receptor molecule on B cells and its ligand and recognized the importance of this receptor-ligand pair for T- and B-cell communication. Once the CD40 ligand gene had been mapped to the X chromosome, several groups of investigators simultaneously reported defects in the CD40 ligand gene as the cause of the hyperimmunoglobulin-M syndrome. Different types of mutations have been identified that result in disruption of the normal coding sequence of the gene, and all lead to failed immunoglobulin class switching.

Other defined molecular genetic errors in primary immunodeficiency disorders include point mutations and deletions of the adenosine deaminase (ADA) gene in SCID-ADA, point mutations in the purine nucleoside phosphorylase (PNP) gene in SCID-PNP, and mutations resulting in truncation of the γ chain of the interleukin-2 receptor in X-linked SCID.

Understanding of the cellular and molecular mechanisms underlying antigen-specific immune responses has led to the discovery of the genetic defects causing many of the primary immunodeficiencies. The rapidity of these discoveries is unprecedented in medical history. These discoveries will lead to strategies designed to directly treat these disorders with gene therapy.

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Health-Care Provider Advice on Tobacco Use to Persons Aged 10-22 Years—United States, 1993

AMONG U.S. adults who have ever smoked daily, 91% tried their first cigarette and 77% became daily smokers before age 20 years.[1] Among high school seniors who had ever tried smokeless tobacco (SLT),73% did so by the ninth grade.[1] Despite the widely publicized risks of tobacco use, in 1993, 61% of high school sophomores believed that the risk from cigarette smoking was "great," and 44% believed the risk from SLT use was "great."[2] The low levels of understanding about the harmfulness of tobacco products underscore the need for health-care providers and others to provide adolescents and young adults with information to counter the allure of tobacco use created by marketing efforts. This report summarizes an analysis of data from the 1993 Teenage Attitudes and Practices Survey (TAPS II) regarding the provision of information about tobacco use by health-care providers to persons aged 10-22 years.

Data about knowledge of, attitudes toward, and practices regarding tobacco use among persons aged 10-22 years were collected by TAPS II by telephone interviews and by personal interviews among respondents not available by telephone. The sample for this analysis comprised 7,960 respondents who had participated in the 1989 TAPS interview and who subsequently responded to TAPS II (aged 15-22 years at the time of the second interview), and an additional 4,992 persons from a new probability sample in 1993 of 5,590 persons aged 10-15 years (89.3% response rate). Data were weighted to provide national estimates. Adjusted odds ratios were computed by multiple logistical regression simultaneously adjusting for all other variables, and 95% confidence intervals were calculated using SUDAAN.[3] Questions included: "Has a doctor, dentist, or nurse ever said anything to you about cigarette smoking?" and "Has a doctor, dentist, or nurse ever said anything to you about using chewing tobacco or snuff?" Correlations with affirmative responses were analyzed in relation to five categories of smoking and SLT use: Never smoked/used (never), tried but never smoked/used on daily basis or during the month preceding the interview (tried), smoked/used daily for at least one month but no smoking/use during the month preceding the interview (past daily), smoked/used during the month preceding the interview but never smoked/used daily for at least one month (current, never daily), and smoked/ used daily for at least one month and on ≥1 day during the month preceding the interview (current, ever daily).

One fourth (25%) of respondents reported that a health-care provider had said something to them about cigarette smoking, and 12% said the same about SLT. More females (27%) than males (24%) answered "yes" to the question about cigarettes, and more males (14%) than females (9%) answered "yes" about SLT (Tables 1 and 2). The proportion of respondents who answered "yes" increased significantly with age for cigarette smoking but not for SLT.

Affirmative responses were most strongly correlated with having a history of tobacco use (Tables 1 and 2). Young persons who reported current or previous smoking or SLT use on a daily basis for at least one month (current or past daily) were significantly more likely than persons who had never smoked/used to answer "yes." Among current, ever daily users, 50% of smokers and 48% of SLT users answered "yes" compared with 21% of never smokers and 10% of never SLT users.

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Table 1.—Percentage of persons aged 10-22 years* who reported that a health-care provider† ever said anything to them about cigarette smoking, by selected characteristics—United States, Teenage Attitudes and Practices Survey, 1993

Characteristic	*%*	*(95% CI§)*	*Adjusted odds ratio¶*	*(95% CI)*
Sex				
Male	23.6	(22.5%-24.8%)	1.0	Referent
Female	26.5	(25.3%-27.8%)	1.2	(1.1-1.3)
Age group (yrs)				
10-16	20.7	(19.6%-21.8%)	1.0	Referent
17-19	29.0	(27.4%-30.6%)	1.2	(1.1-1.4)
20-22	33.7	(31.8%-35.7%)	1.4	(1.3-1.6)
*Poverty status***				
At/Above poverty level	25.6	(24.6%-26.5%)	1.0	Referent
Below poverty level	22.6	(20.4%-24.8%)	1.1	(0.9-1.3)
Unknown	23.8	(20.6%-27.0%)	1.0	(0.8-1.2)
Health status				
Excellent	24.4	(23.2%-25.6%)	1.0	Referent
Very good/Good	25.6	(24.3%-26.9%)	1.1	(1.0-1.2)
Fair/Poor	29.4	(24.7%-34.1%)	1.3	(1.0-1.7)
Region††				
Northeast	27.6	(25.7%-29.4%)	1.0	Referent
Midwest	24.0	(22.4%-25.7%)	1.1	(1.0-1.3)
South	24.8	(23.2%-26.4%)	0.9	(0.8-1.1)
West	24.6	(22.8%-26.5%)	1.0	(0.9-1.2)
Smoking history§§				
PM-,ED-,ET-	20.9	(19.8%-21.9%)	1.0	Referent
PM-,ED-,ET+	24.0	(22.2%-25.7%)	1.1	(1.0-1.2)
PM-,ED+	41.5	(36.0%-46.9%)	2.2	(1.7-2.8)
PM+,ED-	26.1	(22.6%-29.6%)	1.2	(1.0-1.5)
PM+,ED+	50.2	(47.3%-53.2%)	3.2	(2.8-3.7)
Total	25.1	(24.2%-25.9%)		

* n=12,871. Persons who had missing data on any variable (n=81) were excluded from this analysis.

† Doctor, dentist, or nurse.

§ Confidence interval.

¶ Each odds ratio was simultaneously adjusted by multiple logistical regression for all other characteristics and for race/ethnicity.

** Poverty statistics are based on a definition originated by the Social Security Administration in 1964, subsequently modified by federal interagency committees in 1969 and 1980, and prescribed by the Office of Management and Budget as the standard to be used by federal agencies for statistical purposes.

†† Northeast=Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Midwest=Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South=Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; West=Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

§§ PM-=Did not smoke during the month preceding the interview; ED-=Never smoked daily for at least one month preceding the interview; ET-=Never tried cigarette smoking; ET+=Ever tried cigarette smoking; ED+=Ever smoked daily for at least one month preceding the interview; PM+=Smoked on ≥1 day during the month preceding the interview.

Editorial Note: One of the national health objectives for the year 2000 is to increase to at least 75% the proportion of primary-care physicians who routinely provide smoking-cessation advice to their patients (objective 3.16).[4] In addition, the American Medical Association has recommended that primary-care physicians and other health-care providers ask adolescents annually about their use of tobacco products and patterns of use and provide a cessation plan to adolescents who use tobacco products.[5] The findings in this report indicate that only approximately half of those persons aged 10-22 years who had ever smoked or used SLT daily and were current cigarette

Table 2.—Percentage of persons aged 10-22 years* who reported that a health-care provider† ever said anything to them about using chewing tobacco or snuff, by selected characteristics—United States, Teenage Attitudes and Practices Survey, 1993

Characteristic	*%*	*(95% C§)*	*Adjusted odds ratio¶*	*(95% CI)*
Sex				
Male	14.3	(13.4%-15.2%)	1.0	Referent
Female	9.2	(8.4%-10.0%)	0.7	(0.6-0.8)
Age group (yrs)				
10-16	11.3	(10.4%-12.1%)	1.0	Referent
17-19	12.0	(10.9%-13.1 %)	0.9	(0.8-1.1)
20-22	13.0	(11.6%-14.5%)	1.0	(0.8-1.2)
*Poverty status***				
At/Above poverty level	11.9	(11.2%-12.7%)	1.0	Referent
Below poverty level	10.6	(9.1%-12.2%)	1.0	(0.8-1.3)
Unknown	12.0	(9.5%-14.5%)	0.9	(0.7-1.2)
Health status				
Excellent	11.7	(10.9%-12.6%)	1.0	Referent
Very good/Good	11.9	(10.9%-12.9%)	1.0	(0.9-1.2)
Fair/Poor	11.5	(7.7%-15.2%)	1.0	(0.7-1.6)
Region††				
Northeast	10.0	(8.7%-11.3%)	1.0	Referent
Midwest	11.2	(9.9%-12.5%)	0.9	(0.7-1.1)
South	13.6	(12.3%-14.8%)	1.0	(0.8-1.2)
West	11.0	(9.8%-12.3%)	1.2	(1.0-1.4)
Smokeless tobacco use history§§				
PM-,ED-,ET-	10.4	(9.7%-11.2%)	1.0	Referent
PM-,ED-,ET+	13.2	(11.5%-14.9%)	1.2	(1.0-1.4)
PM-,ED+	27.3	(19.9%-34.6%)	2.7	(1.8-4.1)
PM+ ED-	20.2	(15.1%-25.4%)	1.8	(1.3-2.6)
PM+ ED+	47.9	(41.5%-54.2%)	6.3	(4.7-8.5)
Total	**11.8**	**(11.1 %-12.4%)**		

* n=12,843. Persons who had missing data on any variable (n=109) were excluded from this analysis.

† Doctor, dentist, or nurse.

§ Confidence interval

¶ Each odds ratio was simultaneously adjusted by multiple logistical regression for all other characteristics and for race/ethnicity.

** Poverty statistics are based on a definition originated by the Social Security Administration in 1964, subsequently modified by federal interagency committees in 1969 and 1980, and prescribed by the Office of Management and Budget as the standard to be used by federal agencies for statistical purposes.

†† Northeast=Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Midwest=Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South=Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky. Louisiana. Maryland, Mississippi, North Carolina, Oklahoma. South Carolina, Tennessee. Texas. Virginia, and West Virginia; West=Alaska. Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

§§ PM-=Did not use SLT during the month preceding the interview; ED-=Never used SLT daily for at least one month preceding the interview; ET-=Never tried SLT; ET+=Ever tried SLT; ED+=Ever used SLT daily for at least one month preceding the interview; PM+=Used SLT on ≥1 day during the month preceding the interview.

smokers or users of SLT recall ever receiving any communication about the use of cigarettes or SLT from physicians, dentists, or nurses.

The analysis of the TAPS II data is subject to at least two limitations. First, because these self-reported data are based on respondents' recollection of their communication with a health-care provider, they probably underestimate the interactions between patients and their health-care providers. Second, TAPS and TAPS II do not contain information about the number of visits to health-care providers. However, the likelihood that health-care providers will advise against tobacco use is directly related to

the number of visits, and the average annual number of physician contacts varies by age, sex, race/ethnicity, and income level.[6]

The analysis of TAPS is consistent with other reports documenting missed opportunities to provide information before adolescents begin to use tobacco.[1,7,8] Although use of cigarettes and SLT begins early in adolescence,[1] the TAPS findings indicate that only 24% of respondents who had tried a cigarette and only 13% of those who had tried SLT recalled hearing about tobacco use from a health-care provider. In addition, health-care providers were more likely to say something about tobacco use to patients who were current or heavy users, a pattern consistent with that for adults.[9]

Basic strategies to prevent nicotine addiction in adolescents and young adults include tobacco tax increases, enforcement of laws preventing the access of minors to tobacco, youth-oriented mass media campaigns, and school-based tobacco-use prevention programs.[1] In addition, the role of health-care providers is critical in preventing patients from initiating tobacco use or quitting if they become addicted to nicotine: patients who are told to quit smoking by their physician are nearly twice as likely to be preparing to quit than were those who had never been so advised.[10] The National Cancer Institute and the American Medical Association have developed guidelines and national training programs to assist health-care providers in discussing both cigarette and SLT use with young patients.[5,7,8] In addition, CDC, in conjunction with the American Medical Association, is funding new initiatives to foster development of innovative cessation services for adolescents.

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"Dogpatch," and Such Other Places

Part II of II

WILLIAM FLEESON, M.D.
1915-1995

IN mid-June we moved from the Clarke household in Oak Ridge to an apartment in Knoxville. My father lent me money to buy an old Chrysler Royal—a big four-door tank. Gasoline was rationed so car pools were common. That meant that I took the car only once a week. We settled into a routine of a six-day work week. Most Sundays we made an excursion to Gatlinburg or the Smoky Mountain National Park. My wife scrounged for scarce food supplies such as fresh meat, coffee, and sugar.

Suddenly another set of orders dated 17 July 1945 directed me to proceed, the next day, to Ft. Sheridan, Illinois, "and such other places...." An amusing call came from headquarters. A "four-bottle brief case" was to be issued to me with orders not to bring it back empty. Scotch and bourbon were scarce in eastern Tennessee.

Norm and I met the sergeants from "Y" at the train station in Chicago and picked up a car through an MED office under the stadium at the University of Chicago where, we were told, the first atomic pile had gone critical in 1943. Mac called Los Alamos, New Mexico, and jubilantly reported to us that the Trinity bomb test, three days before, had been a complete success. He told us there was now an even more intense crash atmosphere out there to get the job finished.

Trainloads of draftees come into Ft. Sheridan from all over the midwest every day. After processing, the men went out in troop trains for 13 weeks of basic training. These bewildered draftees were learning, "You're in the army now!" the hard way. They ate, slept, and hurried up to wait by the numbers and in large impersonal groups.

We were looking for one glass blower, machinists who could tool graphite, and more men for guard duty. All were needed in Los Alamos at once. We worked smoothly as a team. Mac chatted with the men who assigned MOS numbers to the draftees. Norm and Joel went to work with their long needles pulling the cards of the men we wanted to see. Ft. Sheridan staffers sent for them—how they were able to find them so quickly mystified me.

As in Missouri we talked with the soldiers in small groups for about half an hour. We told them we were offering them a chance to continue their civilian occupations in an army project somewhere in the southwestern United States, and that they did not have to accept the assignment, though then they would go for basic training and take their chances on where they would be assigned for whatever duty that might be required.

Their responses were immediate and incredulous:

WILLIAM FLEESON, M.D., Yale School of Medicine, Class of 1942, was professor of psychiatry at the University of Connecticut School of Medicine from 1963 through 1995, and was associate dean for student affairs during his first decade at the school. He was one of the first of two faculty members called to the School of Medicine after the appointment in May 1963 of Lyman Maynard Stowe, the founding dean. Dr. Stowe asked Dr. Fleeson, assistant dean at the University of Minnesota, and Dr. John Patterson, dean at the University of British Columbia and previously vice chancellor and dean at Vanderbilt, to join him in planning the new institution in Farmington. Dr. Fleeson was a member of the Connecticut State Medical Society from 1963 until his retirement in 1982. He continued teaching and seeing patients at the Newington Veterans Administration Medical Center after his retirement until a few days before he sustained a stroke and died on 13 November 1995.

Dr. Fleeson presented this very personal account of his experience with the Manhattan Project in 1945-46 to Mr. Whitney Jacobs shortly before his death. Mr. Jacobs, formerly of the *Hartford Times,* had been for many years Director of Public Relations at the University of Connecticut Health Center in Farmington.

"But we know we're in for the duration and the army can send us anywhere to do whatever they want."

"You're asking us to volunteer?!"

"This ain't the army I heard about!"

"What's this all about?"

By turning their questions back to them and by a judicious use of silence—that powerful stimulant to speech—we were able to coax them to talk among themselves, while we observed the interaction. They sorted themselves out fairly quickly: there were braggarts and silent types, those who tried to dominate the group and those who were not going to be talked into anything. Of course, there were the scared and anxious ones as well as those who had hoped they could avoid military service altogether now that the war in Europe was over.

We interviewed about 100 men a day, and I screened out about 10%. The men we chose went directly to "Y" without benefit of basic training.

I made some quick judgments on scanty evidence and gave the sergeants yes or no answers. This was a kind of hocus-pocus which I only half-believed then (and less now 50 years later). However, my recommendations were accepted. The sergeants seemed to be considering job experience in their selection procedures, unusual for an army noted for mismatching men and jobs: turning cooks into first aid men, truck drivers into cooks, shoe salesmen into MPs.

We did not find a glass blower on the first day nor until afternoon on the second. I interviewed a frightened and withdrawn young man who seemed barely able to cope with the crowded confusion of the induction center. I told Mac that I was afraid he would crack up and need hospital care within six weeks if we sent him into the pressure cooker at "Y."

That's not the question, Doc. Can we get six weeks of work out of him before he cracks up?"

"Sergeant, find another glass blower!"

The next day another glass blower showed up. He got only a cursory interview before we sent him on his way to the Southwest.

The four-bottle brief case was refilled in nearby Highland Park. From Sheridan the orders directed me to Camp Robinson, Little Rock. Social workers were needed in Oak Ridge and men were all too eager to give up careers as foot soldiers for a return to their civilian occupation of social service.

Four days after my return from Chicago and Little Rock I was on the train again headed for Ft. Dix near Trenton, New Jersey, and New York City. I left Knoxville in August 1945, with a captain, Judge Advocate General Department, who had other business at Dix and in New York. We arranged our schedules so we could spend the weekend in the city.

My Uncle Robert invited me to dinner at his apartment in Manhattan overlooking the East River. It was there that I had heard the news of the bombing of Pearl Harbor in 1941. The city was a strange sight since some of the blackout regulations were still in effect, though VE day was two months in the past.

We were relaxing after dinner in the apartment when Bob asked "Well, Bill, have you got the atom split yet?"

I was startled and shaken by his question. "Bob, don't even say that word! I don't know anything about it!"

"Everybody in New York knows what's going on down there," he said.

This was undoubtedly an exaggeration of some considerable magnitude. Bob had no need to know. He was not a scientist, and was not doing any military work.

Though startled by Uncle Bob's comments I was not afraid that I had broken security. I knew I had talked to no one about the bomb, not even to my wife.

Bob respected my refusal to talk about my job. The next day I returned to Ft. Dix and interviewed more soldiers during the day with the captain from Dogpatch. Late in the afternoon on 1 August we walked into the Officer's Club for dinner. A shout came from across the room and we learned that more people than Uncle Robert knew our secret, the whole world knew.

"Hey, you guys, now we know what's been going on in the Manhattan Project!"

The captain and I looked at each other and mirrored consternation.

My thought was, "Good God, who has broken security?" The captain must have been thinking the same thought.

"What are you guys talking about?"

"Oh, come on! We're onto you."

"What do you mean?"

"Haven't you heard?" They were incredulous, envious, and jubilant. And enjoying our obvious discomfiture.

"It's all over the radio, everyone knows about your bomb that hit Japan yesterday."

We were stunned and unbelieving until we heard the 6 P.M. broadcast. Only then could I begin to believe that the secret project was now public knowledge—just like that. The news broadcast said that a single "atomic" bomb, equivalent to 20,000 tons of TNT, had destroyed Hiroshima. There were no details on casualties. But how were we to deal with an abrupt reversal of security policy? Practice was to begin at once.

The next morning a major, Corps of Engineers, sent for me. He told me that the commanding general of Ft. Dix, a brigadier, wanted to see me so that he could find out more about the project. The general seemed a kindly older man, grey-haired, deliberate in speech and manner.

"Captain, what is this 'atomic' bomb?"

I tried to explain, but without knowledge of nuclear physics, without any technical information, and still inhibited by the mind-lock of security I could not tell him much of anything. Besides all that, I was not at all comfortable talking with the general and his adjutant. After a few minutes he shook his head and said, "This is all beyond me, captain. I don't understand this bomb at all, or what it means," without realizing that he was voicing my incomprehension as well as his own. I was mercifully dismissed.

On our return to Dogpatch we found that no one there seemed to know how to deal with our naked exposure. We were embarrassed. We had been more comfortable not talking about the bomb. No one that I knew talked any more about his job than they did before the secret was out.

Only after the second bomb, on 9 August, and the surrender of Japan on the 15th, did we begin to talk about what had happened and to speculate about the future: our return to civilian life, what might become of Oak Ridge as a city, the impact of nuclear energy on industry. We had yet to realize the danger to civilization that the bomb has since become.

Gradually the walls of silence began to dissolve. I learned about a young navy officer who in 1944, before I arrived in Dogpatch, had been challenged when he attempted to commandeer the airplane assigned to the project. He had told the guards that he was going to fly to Berlin and Tokyo to tell Hitler and the emperor to surrender because they had no chance of winning the war. After a struggle the man was subdued by four MPs and taken into custody. He was violently disturbed, his speech was disorganized, and he was clearly out of his mind. He was brought to the hospital for examination. Dr. Clarke, the head of the psychiatric service, found him to be quite mad and in need of skilled psychiatric care. Dr. Clarke wanted to send him to Saint Elizabeths Hospital in Washington, D.C. For security reasons the district engineer and the head of security were opposed to letting him outside the fence. With the support of Colonel Warren, the chief medical officer for the district, and Lt. Col. Charles Rea, CO of the hospital, Dr. Clarke persisted in his request that the man be sent off the reservation for long-term intensive psychiatric care.

The Chief of Psychiatry for the Navy and Marines, Capt. Francis J. Braceland,* was called in consultation. He confirmed the need for long-term care and predicted that the officer would eventually recover. He was not sent to Saint Elizabeths; instead a two-family dwelling unit near the hospital was converted into a one-man hospital at Oak Ridge. The locks were reversed on the outside doors of one unit where the officer was kept; nurses and orderlies were housed in the other half of the building.

The decision to keep the patient on the post was believed to have been made by FDR in the White House. There was partial confirmation of this from Dr. Braceland himself. When I interviewed him in 1984, Dr. Braceland remembered his visit to Oak Ridge. He said he was delayed at the entrance gate and by lengthy conferences with security officers both before and after his consultation with the patient who was being held incommunicado at the hospital. He reasoned that when the man recovered, there might be an even greater problem for security if he was sent to Saint Elizabeths for treatment. On his return to Washington, Captain Braceland reported to his superior, Adm. Ross McIntyre, the Navy chief of the Bureau of Medicine and Surgery. Admiral McIntyre was also FDR's personal physician and made regular weekly visits to the White House to protect the frail health of his famous patient. Dr. Braceland was asked to stand by one evening as Dr. McIntyre might need him when he made his weekly house call. Dr. McIntyre did not call and Dr. Braceland said that he thought no more about the matter though he believed that he would have been informed if the navy man had been sent to Saint Elizabeths.

Regardless of who made the decision, the officer did stay in Dogpatch. Dr. Carl Whitaker, a civilian psychiatrist on the Oak Ridge Hospital staff, remembers that he worked with the patient every day for about four months, until he was well enough to return to duty.

Dr. Whitaker, in a phone conversation in 1984, gave me some details about another patient he treated at Oak Ridge. This man was working in a restricted part of one of the uranium separation plants. A pipe broke and leaked concentrated uranium 238 into the room. Instead of leaving by the nearest available exit, door or window, the worker tried to shut down the pumps and in the process inhaled the dust. He was brought to the hospital, a very sick man. None of the medical staff had had any experience with that kind of poisoning. In addition to multiple physical and metabolic problems which affected all systems of his body, he was confused, disoriented, and delirious. Dr. Whitaker, who tried to manage and treat his mental state, said: "He

*Dr. Braceland was psychiatrist-in-chief at the Institute of Living in Hartford from 1951 to 1965. He was also a member of the Citizens Committee for a Connecticut Medical-Dental School in the late 1950s, and was on the committee that selected Lyman Stowe to be the first dean of the University of Connecticut School of Medicine in 1963.

was crazy as hell for two or three months and very sick. For a while they didn't think he would make it, but after about six months he recovered."

Most of our patients had less dramatic stories to tell. We saw people with marital problems, disturbed and unruly children with behavior disorders, various degrees of anxiety disorders and depressions. Some required hospitalization because they were seriously disturbed and disorganized. A few were brought to Oak Ridge from Los Alamos and from the heavy water installation at Hanford, Washington.

An inexplicable fact was that none of our patients ever talked about what the Manhattan Project was all about. None ever breached security even though some of the more severely disturbed ones had lost touch with reality.

One of my assignments was to make regular visits to the public schools to meet with teachers about problem children. With a population of over 75,000 people living inside the fence, the engineers built schools. There was a high school with a capacity of 1,100 students, a junior high school for 2,500 and eight elementary schools for 6,500 children. There were more than 300 teachers.

High school students began to bring home report cards with low or failing grades in science and physics. Many of their parents were scientists and engineers and had helped their children with homework—they knew the answers were correct. The parents descended on the school and soon discovered the teachers knew only Newtonian physics and nothing about modern atomic and nuclear physics.

Once the problem was identified the parents volunteered their services to give lectures and hold seminars for the high school science teachers. Presumably the instruction stopped short of atomic fission lest omnipresent security would clamp down the lid.

In September, a month after Hiroshima, I was back at Ft. Sheridan still recruiting men for Los Alamos. Instead of the near-anonymous Army Service Command shoulder patch we proudly sported the distinctive Manhattan District emblem on our uniforms with the golden wreath of the Meritorious Unit Award on the right sleeve. The just-authorized patch was shaped like a flattened egg with a dark blue background. A white question mark surrounded a tiny Army Service Command red and white disc with a blue star. The tail of the question mark was a lightning bolt leading to a fractured golden ball. The shoulder patch was uncommon and caused considerable comment.

When I returned to Oak Ridge in early October, the population was beginning to shrink. The medical staff officers who had been overseas before assignment to Dogpatch had enough "points" to be demobilized and left for the Separation Center at Ft. Ogelthorpe, Georgia. Plans were underway to turn the hospital over to civilian control. The psychiatric service was to be closed early i 1946. Civilian scientists, no longer needed for researcl and development, vacated their houses leaving the operat ing personnel to keep the plants running.

I was assigned a three bedroom "C" house for my famil about 200 yards up the hill from the hospital. The hous was completely furnished. The operating company of th town provided utilities and services without charge thoug I no longer drew a monthly $75 allowance for housing About this time the work week was reduced from 48 hour to 45 so we had more time to spend with our families. W spent many pleasant days in the Smoky Mountain Na tional Park east of Knoxville, and the two-hour-a-da commute was eliminated.

Late in November I made my last trip with the recruiting crew. This time we went to Washington, D.C. I came back in the two-engine plane assigned to the project with the district engineer. The colonel rode in the cockpit and I sa in the empty and unheated cargo space behind.

After Drs. Clarke and Whitaker left in March 1946, I drove my wife and son to Minneapolis and returned by train noticing the advance of spring as I moved south.

Along with half a dozen other officers, I began training to be a radiation monitor at the full scale test of the bomb on Bikini Atoll in the Pacific.

Five or six of us, all officers, were sitting in a room with our instructor. We all felt that we had had it. Sweeney, after three years of destroyer duty and another year behind a desk, was vaguely interested in what the sergeant was saying but mostly just wanted to go home. Ashner had made it clear he would not stay any longer than he had to. He hoped he could return to the Mayo Clinic to complete his training in internal medicine. Ferris and I were, quite simply, going along for the ride. We both had jobs waiting for us. He was going to join the pediatrics department at the Henry Ford Hospital in Detroit and I was going back to Minneapolis to a private psychiatric practice group with Eric Clarke.

The young instructor took his job seriously. He was accustomed to teaching graduate students in physics and had been working on his Ph.D. when he was recruited and made a sergeant. We did not know anything about physics beyond the courses we took in college in the 1930s. We had no interest in being monitors at Bikini or anywhere else.

Our makeshift classroom was next door to the instrument room where Geiger counters were clicking away. Someone had set up a routine check of air samples in the plant. Underneath and all around us motors throbbed and hummed. Occasionally a bicycle swished past the open door as an inspector made his rounds in the vast building which housed the gaseous diffusion plant.

The lecture was about differential and partial pressures of infinitesimally small masses of uranium in gaseous form, the end product was purified in mass spectrographs. We had seen hundreds of those massive machines when we had taken a tour of the plant. I was daydreaming and paying little attention. I wondered if I would be listening to the staccato clicks of a Geiger counter at Bikini. Would the task force commander hold us in service for six months after the test? Maybe I would be better off if I requested my release to the surgeon general and took my chances on whatever assignment I got from him. Rumor had it that the surgeon general was not sympathetic to the Manhattan Project because he had not been allowed to take part in planning the medical services. We didn't think that we could expect much from the navy either. Suddenly, I heard the sergeant say:

"... thousands of tubes ..."

Sweeney interrupted with, "You mean each one of those drums downstairs has some tubes in it?"

"Yes, sir. Thousands of tubes, Commander!"

He saw the doubtful expressions on our faces and we read his face:

"Come on you jokers, I'm doing my best to give it to you straight, but you are the worst I've ever had to try to instruct."

He took us downstairs and showed us a wooden crate about eight feet long and four feet square. A workman raised the crate and there was a drum about six feet long and three feet in diameter closely packed with half inch tubes—thousands of them.

Another day we were shown the Oak Ridge reactor and were allowed to climb on top of it. Far below and to one side was an ingot of shining gold in a pool of water giving off an eerie blue light. We were told that a pig of iron had been treated by nuclear bombardment in the pile and transmuted into gold—the alchemists' dreams come true. The gold was not of much use, however, because it would be highly radioactive for hundreds of years.

Three weeks before the Bikini test on 25 July 1946, I had enough points for discharge and happily retired my uniform.

Nothing I did while assigned to the Manhattan Project had any effect on the outcome. The bomb was not completed one day or one hour sooner than if I had not been there at all. And I was never asked for a verbal or written report on my recruiting journeys.

I have often been asked and often have asked myself how it feels to have had a part in producing the atomic bomb. I believed then with passionate conviction that I was involved in an enterprise that would help to win a war that we desperately needed to win. Close personal friends had lost their lives already—Dean Dalton shot down in flames over Germany; Chevy White dead with a bullet between his eyes on the beach at Tarawa; John Bates, a medical school classmate, lost at sea in the South Pacific when his ship was sunk by a Japanese bomb. My younger brother had written from the Philippines that he feared he would not survive the invasion of Japan as he was to be one of the first to hit the beach. I was glad the war was over.

I had been given the job to do and I carried out my assignment. I was not asked or told to do anything which I was unwilling to do. At no time were there any problems of conscience, my ideals and personal integrity were intact. As a medical officer, I was in the fortunate position of being able to do what I liked to do and had been trained to do. Medical officers are not expected to go into battle to fight the enemy. Oak Ridge was a combat zone for sure, but the enemy was time, no one was shooting guns at us nor dropping bombs.

On another level there was patriotism. In 1945 there were a lot of patriots. There were undoubtedly varying degrees of reluctant patriotism, but there was universal recognition that there was a national crisis and that the future of the United States was at stake. The Allied victory in Europe served to strengthen our resolve to get the damn war over with and avenge the "day of infamy" of Pearl Harbor. Yes, I was patriotic.

There are other larger questions that are harder to answer: Was it wrong to develop an atomic bomb? Were we justified in using it after it was produced? What could we have done to control or prevent nuclear war once the bombs had been dropped on Hiroshima and Nagasaki?

We know now that both German and Japanese physicists were officially exploring nuclear energy for their governments as early as 1941. The Russians began work in 1942 and were greatly assisted by information fed to them by the spy, Klaus Fuchs, who worked as a physicist with Oppenheimer at Columbia from December 1943, and later at Los Alamos, through July 1945. The inescapable conclusion is that the bomb would have been developed even if there had been no Manhattan Engineering District.

Justification for use of the bomb on Japan was vigorously debated by its scientist-makers. Since then volumes have been written about the decisions and how the decision was made. Peter Wyden wrote in Day One that once the bomb had been built, planning to deliver it on the target took on a life of its own. The bombing was inevitable. Be that as it may, the overwhelming sentiment of the time was that the destruction of Hiroshima was justified. World War II came to an end. The planned invasion of Japan

became unnecessary with the result that there were no further casualties. Estimates were that the U.S. would lose 500,000 men and there would be as many as 2,000,000 Japanese casualties in the invasion. Today's second thoughts have all of the questionable qualities of hindsight.

Control of further use is unanswerable for me. Few, if any, in 1945 could have foreseen the nuclear arms race which we have seen over the last half century. We did not know then and we cannot agree now how to control and direct the forces that science and technology can unleash. In our currently divided society, where everyone seems to have a passionate conviction about what is best for all of us, there is no agreement. The debates continue.

Albert Einstein, who had urged Roosevelt to initiate a nuclear research program in 1939, told a *New York Times* reporter after Hiroshima, "The world is not yet ready for an atomic bomb." Later he wrote, "The unleashed power of the atom has changed everything except our way of thinking." We do not seem to have come very far getting ready for the bomb, or changing our ways of thinking about it.

Albert Schweitzer Institute for the Humanities Selected by the Inter-American Development Bank to Implement One of Their Most Innovative Projects in South America

In cooperation with the Inter-American Development Bank (IDB) and the Health Ministry of Suriname (South America), the Albert Schweitzer Institute has been selected to monitor the medical infrastructure of a 75-bed hospital for the next three years. Albert Schweitzer Institute for the Humanities (ASIH) will staff a hospital in Nickerie, a relatively remote region in the rain forest of northwest Suriname. The hospital has been plagued by financial, political and personnel crises that have severely limited its operations since the 1970s.

Through a generous IDB loan of $7.5 million to Suriname, the Bank and the Health Ministry have undertaken a major construction project to refurbish and modernize the facilities, which are near completion. In recent years, the hospital has operated at less than half capacity, with only one general practitioner and nine certified nurses. Specialized care is sporadically available.

Dr. Manorath Doerga, a Nickerie native who has been living in the Netherlands, has been appointed by the Albert Schweitzer Institute as Project Director. He has committed himself for the three-year grant period.

Harold E. Robles, President and Founder of ASIH, said, "I am very happy to have the opportunity to give something back to my birth country of Suriname. History is repeating itself 80 years after Albert Schweitzer went to serve humanity in a remote region in Africa. The Institute I founded in his name carries on the legacy, delivering health care in a remote region in Suriname, South America."

"The Nickerie Hospital is a particularly fitting endeavor for the Albert Schweitzer Institute and a daily reminder to the staff of the monumental example of our namesake and guiding spirit."

The agreement between ASIH and the Health Ministry of Suriname will be signed during a ceremonial gathering in Nickerie on Wednesday, 13 December. Mr. Robles is leaving for Suriname on 12 December, accompanied by Mr. Chandra Raj, ASIH Director of Finance and Administration.

ASIH is a nonprofit, nongovernmental organization established in 1984 to perpetuate Schweitzer's philosophy, "Reverence for Life," by promoting and sustaining the physical, spiritual, and educational well-being of humanity within a balanced environment. The Albert Schweitzer Institute is in residence at Choat Rosemary Hall in Wallingford, Connecticut.

Editorial

Re: "A Violence Prevention Program Targeting Adolescents"

Publication in this issue of *Connecticut Medicine* of "A Violence Prevention Program Targeting Adolescents," from the Department of Emergency Medicine at Saint Francis Hospital and Medical Center, is a timely recognition of the epidemic of violent crimes committed by and against youths in the United States.

At a press conference in the turbulent 1960s, H. "Rap" Brown said "Violence is as American as cherry pie." Thirty years later, grim data from the Bureau of Justice Statistics and the National Center for Health Satistics paint a stark picture of teen-age violence in this country. Homicide is the second leading killer for young Americans and weapons offenses are the fastest growing youth crime. In a recent statement, President Clinton called these statistics a "chilling reminder" that juvenile violence is the country's top crime problem.

While arrests are increasing and millions of dollars are being spent to devise community policing programs, the victims of violence end up in hospitals' emergency departments, setting in motion expensive tertiary prevention services ranging from crisis intervention to operating room heroics. Concepts of primary prevention, however, provide the ultimate gold standard in our approach to any disease process. The "Lives at Risk" program at Saint Francis is indeed a laudable example of the role that health professionals and hospitals can play in developing interventions to prevent injuries.

There is a paucity of epidemiologic and clinical data regarding the medical and economic consequences of juvenile violence. Most hospital emergency departments limit their involvement to legally mandated areas like child abuse and sexual assault. It would be useful and beneficial to all concerned if there were more systematic epidemiologic surveillance and research to guide us in our primary prevention efforts. The fiscal effect of the medical resources diverted from other areas by this epidemic also warrant study and action in this era of cost containment.

It is gratifying to note that the University of Connecticut has started a residency program in emergency medicine, some 20 years after postgraduate training in this specialty first appeared at academic medical centers in other states. The era in which often inexperienced moonlighters staffed emergency departments is clearly coming to an end, with a new standard of care provided by career-oriented and residency-trained physicians. Focused research and proactive primary prevention programs like the one at Saint Francis Hospital are vital indicators of the maturity and usefulness of an academic department in the House of Medicine.

This morning, I read in my local newspaper that the administration in Washington is asking Congress to override a Supreme Court decision that struck down a law prohibiting people from bringing guns onto school property. If we will stop shooting ourselves in the foot, perhaps we can make some progress.

Vijay K. Sikand, M.D.
Lawrence and Memorial Hospital, New London
Clinical Assistant Professor of Medicine,
Tufts University School of Medicine

East Lyme

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

Guest Editorial

Quality Assurance, Continuous Quality Improvement, Medical Fallibility, and Freedom

Quality assurance (QA) programs have been with us for more than 20 years. They have been followed by continuous quality improvement (CQI) programs.[1,2] The main difference between what was done before these formal required activities began and now is the current mandate for documentation. Documentation is required by the Joint Commission on Accreditation of Healthcare Organizations for approval of hospitals. The saying, "If it isn't written down, it didn't happen," became the standard.

The expressions "QA" and "CQI" stand for entirely different approaches to improving medical care. QA includes such outcome analyses as tissue committee matters, and conferences that review good and bad outcomes, such as grand rounds, and morbidity and mortality (M&M), clinico pathologic, and surgical pathology conferences. QA activities not only required records of outcome analyses, but also became broader in their scope. Analyses were introduced of "quality indicators" such as postoperative infection rates, accuracy of frozen section diagnoses, and the frequency of routine rectal examinations on hospital admission.

CQI programs were adapted in part from approaches in the automobile industry. The aim was to improve quality to compete economically in a tough marketplace. This method sought total prevention of defects. The CQI system depends on an enlightened educated work force imbued with a "manager's" sense of responsibility for excellence. Engagement in this ideal must extend to every single employee from company president to worker on the production line, each empowered by the system to implement needed improvements. CQI also involves statistical monitoring of quantitative indicators, which detect potential problems *before* a defective product can emerge. This approach, championed by Deming,[3] was adopted by Japanese automakers with spectacular results that rocked the American automobile industry.

An ideal aim of QA and CQI, while not realistically possible, is the abolition of medical fallibility. A practical goal is reduction of medical fallibility. How great a problem is medical fallibility? Goldman's landmark study,[4] and its many successors worldwide[5-13] provided a measure of the degree of fallibility inherent in clinical practice today, even in sites renowned for optimal standards. Each study revealed major diagnostic discrepancies between clinical and postmortem findings in 20% or more of autopsies studied. The authors analyzed the therapeutic significance of these major discrepancies. Later work concluded that selecting only diagnostically difficult or puzzling cases for autopsy is inadequate for attacking fallibility and increasing knowledge, in that fully 19% of autopsies of clinically *routine* cases reveal major diagnostic surprises.[14,15]

How should we react to these striking data? Goldman, et al noted, "Our missed diagnoses did not represent malpractice or negligence but, rather, indicated that advances in medicine have left a residuum of obscure diagnoses, thus preserving the value of the autopsy."[4] A penetrating analysis came from Gorowitz and MacIntyre who noted that "No species of fallibility is more important or less understood than fallibility in medical practice."[16] *Avoidable* errors can have diverse causes including lack of or misapplication of expected medical knowledge. Two forms of *unavoidable* errors pertain especially. One arises from deficits in medical knowledge in the current state of the art and science of medicine. The other is due to an unfamiliar reason, which the latter authors call "necessary fallibility." This stems from their view of medicine as a "science of particulars," ie, that each case is a *unique* particular variation in the presentation of a disease. Necessary fallibility results from extremes of variation, presenting guises that may mislead physicians into false diagnoses with their inevitable consequence: medical mismanagement. Necessary fallibility reflects the reality that the most consistent feature in nature is variation. Necessary fallibility can be avoided only by doing nothing at all.

However, both clinicians and the public's current attitudes towards fallibility are far less forgiving. Willingness to engage in positive, creative wrestling with fallibility by physicians has diminished progressively over the past 20 years, in part because of increasing fear of lawsuits. Today's reaction to mistakes, as stated by many physicians and by the public, is that errors are unacceptable. Implicit in such a reaction is the inflated and mistaken belief that the power and accuracy of diagnostic technology have rendered physicians perfect and have made error a marker of substandard practice.[17,18] Worse yet, some physicians appear to consider a peer *discredited* by any demonstrated fallibility.[19,20] Consider then with what anxiety any physician laboring under this expectation would

regard a revelation of an error of her own. This fearful mind-set has made physicians inappropriately reluctant to discuss their own or anyone else's errors openly, no matter how benignly the case conference or other setting is constructed.[18,21] Among 254 internal medicine housestaff members surveyed about their own most recent errors in patient care, 114 replied anonymously.[22] Only 57% of these physicians—still in training and therefore putatively most needful of correction and most open to it—had discussed the errors with an attending physician or at morning report, and only 31% had reviewed them at an M&M conference. The respondents noted that "The tough issues were not addressed in about half the cases."[22]

The stifling of critique has also contributed to the decline of the autopsy.[17] Autopsy serves not only the educational functions for which it has been esteemed for centuries, but also as a powerful tool for educational audit. Autopsy was once sought eagerly by physicians to enhance their knowledge and to bring that knowledge to bear for the benefit of their future patients. Cases were discussed at exciting M&M conferences, the rigor of which was accepted as essential to the continuous sharpening of clinical acumen. These conferences embodied the essence of classical quality assurance (QA).

Starting in the late 1960s the avidity to pursue knowledge through autopsies and M&M conferences began to be curbed by many factors.[23,24] These included the unsubstantiated notion that technological advances had rendered the autopsy obsolete; clinicians, frustration at incompetent autopsy performance by poorly trained pathologists; reluctance of pathologists because of pressures of clinical and surgical pathology and inadequate compensation; and fear of medical litigation incited by unexpected findings. The resulting inertia was compounded by fear of humiliation. Shame was inferred at what became perceived as discreditation through revelation of a missed diagnosis, even one that could not have been predicted. A tacit understanding came to pervade the medical profession that freedom of ordinary collegial professional critique was suspended *sine die.*

How can this pernicious ban on freedom of critique be lifted?

Psychologically, a key condition for the revival of the educational power of constuctive criticism is an explicit declaration of freedom to express professional criticism by physicians. Word would spread quickly if role models of our profession, the department chairs and the most highly regarded attending physicians, were to restore the candor of bygone days by open discussion of their own errors at suitable conferences.[19,25] The power of an authoritative figure publicly acknowledging personal fallibility would be formidable indeed.

What is the promise of CQI programs to reduce medical fallibility? Unfortunately, the only medical care activities genuinely analogous to manufacturing and service practices are those separate from decision making. These include accurate and timely medication dispensing; laboratory processing and reporting; the conduct of imaging and physiological studies; some aspects of infection control; and meeting patient environmental comfort needs, eg, for warmth, sanitation, scheduling, food, and clothing.

Classical QA practices retain an important role along with CQI in fostering improvement in physician decision-making about diagnosis and treatment. The inherent uncertainties of medical practice due to gaps in current knowledge and to necessary fallibility, which are not adaptable solely to the CQI schema, call for the maintenance of a QA component.

Conclusion

Thus, CQI and QA programs complement each other in raising the standard of medical care. Complete prevention of errors in the details of diagnostic services, medications, meals, and infection control would eliminate significant sources of adverse patient outcomes. QA programs are vital for the continual education and empowerment of physicians to cope with the uncertainties and necessary fallibility of clinical diagnosis and management. In addition, the benefit of current QA activities would rise sharply if we would lift the unspoken ban on freedom of professional critique. This could be accomplished without expense if those physicians who serve as role models will show the way by personal example.

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50 Years Ago
From *The Connecticut State Medical Journal*
January 1946

Timeo Danaos Dona Ferentes

ROGER I. LEE, M.D., Boston

The Author. *President, American Medical Association*

I HASTEN to deny the implication that I come from Harvard to Yale either with a fragment of erudition or with a fragment of invective. About three centuries ago, Harvard men came into the wilderness of Connecticut and founded Yale College in New Haven. About ten days ago, some Harvard gladiators came to New Haven hoping to be able to quote Caesar, when he wrote "Veni, vidi, vinci," but alas they "victi sunt" 28 to 0.

As a matter of fact, I thought the meeting was to be held in Hartford. The soft blandishments of the persuasive Creighton Barker suggested that I come to a dinner of the House of Delegates and perhaps say a few words. And so, when his secretary, more courageous than he, asked for the title of my address, I sent on a few words, four to be exact. "Timeo Danaos dona ferentes," "I fear Greeks bearing gifts," or more freely translated—beware when you are asked to dinner, for you will have to speak for it. And so I found myself with a title and no speech and now I have a dinner and I still have a title and I have acquired a few thoughts in the following fashion. When I get into a pickle I always consult two persons. My wife was terse and emphatic: "It serves you right." "You have never learned to say NO." The other is my chauffeur, John. John is an old army man and served in World War I, and for some years thereafter. John, after a preliminary vagueness, suddenly is apt to come to the point of his remarks. He is like a Scottish Professor of Geology who sat beside me at a high-brow academic occasion. At the moment, some man was delivering a lecture in French. After a bit the Scotsman whispered to me, "There are several reasons why I don't like to listen to lectures in French. In the first place the French always talk too fast. In the second place, I do not understand French. The other reasons are unimportant." When the World War II stopped shooting, John and I shook hands and said it was fine and it would be grand to have our three boys in Europe back home. John remarked, however, that none of the boys was married or had children and we must not expect them home soon. (They are not home yet despite points, service stars and citations.) But John added, "I do not believe we will have to have a Victory Garden next year." John does most of the work in the garden and I do the least. And we shook hands warmly again. And on the present problem John said he did not know Latin. Apparently dactylic hexameters meant nothing to him in any language. However, he was willing to say that the Army and the Government is apt to be illogical and quite unpredictable and tends to be sentimental and even soft in spots and in very queer spots at that. And, moreover, it had always seemed to him a good idea to look after oneself if one had business with the Army or with the Government.

I have often referred to the fact that the doctor has not been the arbiter of his own destiny. Actually he is a creature of the environment and of the community. Largely the general environment and the community has determined the education of the doctor, his license to practice,

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how to practice, what are his associations with his hospital and a good deal about his remuneration and much else. To be sure, the doctor has a voice, but certainly the lay influence is equally, if not more, decisive. In a simpler society, in the old days of the medicine man, the picture was clearer. Then when the community did not like the medicine of a medicine man, a new medicine man happened. Today to be sure the doctors know a little, the laity knows a little less (and nothing like as much as they think they know). Nevertheless the doctor is still not the sole arbiter of his destiny and in truth his voice may be feeble or fall upon deaf ears.

I yield to no man, lay or medical, in my concern over poverty and my desire to achieve a better distribution of good medical service. But I maintain that poverty and inadequate medical care are not necessarily identical problems. Furthermore ignorance, prejudice and superstition are, as Sir William Beveridge has pointed out, factors that cause much misery in this world. I further maintain that it is in the public interest to separate those measures designated to alleviate poverty, fair wages, good working conditions, food, housing, education, old age benefits, etc., from good medical service. There is too great a tendency to throw a sop of medical service instead of better wages, working and living conditions. As citizens, we doctors are concerned with the problems of poverty and often have a familiarity with those problems, not given to all citizens. But in the matter of good medical service the doctor should be the expert witness in the case.

We are now in the throes of a great debate on the subject of the practice of medicine. A great medical School recently organized a series of lectures on the practice of medicine. There were to be seven or eight lectures and only one by a practitioner of medicine. Now I certainly do not believe that one has to be able to lay an egg in order to decide if the egg is edible or not. Furthermore, I do not believe that one has to eat the entire egg to know that the egg is bad. But a reasonable experience with eggs may be helpful. There seems to be many kinds of eggs and even many kinds of hen's egg, not just good and bad eggs. And I am reliably informed that certain communities want only white eggs, while the taste of other communities runs to brown eggs. And some communities like large and some like small eggs. Mind you, this only concerns the exterior of the egg. Anyhow, I am not saying that there is any comparison between doctors and eggs. It is not my fault if some of you think that it is relevant.

Likewise, one does not have to be an acknowledged poet to appreciate poetry, but I do submit that a certain knowledge of poetry and a certain acquaintance that might be designated as a familiarity with poetry is highly desirable when one undertakes to criticize favorably or otherwise poetic productions.

At this moment, the tactics of some of those who want to revolutionize the practice of medicine seems to have altered. At one time, the argument seemed to run as follows: there must be a change if for no other reason than it is a change, therefore agree to it or else. Now what is startling are the naive assertions that the newest bill is not state medicine nor governmental medicine, that it will help the doctors professionally by furnishing hospitals, etc., and that it will help the doctors financially. Not only that but the doctors will get easy loans, fellowships, etc., etc.

In other words, the fly swatter technic has been exchanged for the sticky flypaper, the cat for the mousetrap baited with cheese. Most of us have caught the colt with the temptation of grain and with a halter behind our backs. We have shot ducks in blinds behind wooden decoys. Of course, verifying the Latin once more, "decensus averni facilis est" (descent to perdition is easy), the downward chute is probably well greased, and if the victim can be greased, buttered, soft-soaped, or beguiled by honeyed words to the chute, the descent is greatly facilitated. I'll spare you the Latin, telling of the travail and toil of making the ascent from Avernus.

Well, it is true that in New Zealand, where a large number of special experiments have been tried, some successfully and some not so successfully, the doctors, in many instances, have unfortunately made what amount to financial racket out of the complex system of reports in the new and revolutionary system of medical practice. Of course that is not good for the doctors but what is of real and vital importance, it is not good for the patients or for medical practice. One finds, alas, too often, that the real and actually sole objective of any and all forms and systems of medical practice, namely better medical practice and better medical care of patients, gets only a quick "brush-off" in these new plans and systems. Progress towards the goals of better medical practice and which is in truth hard and difficult. John Bunyan's Pilgrim's Progress is a far more accurate description than the dazzling story of rolling millions or billions. The late Dr. Goldwater described the ecstatic phantasies of political medicine "It is too simple to be true." Magic words and magic wands will not cure the sick, nor keep the well well. But hard work will.

And so my text. Beware the Greeks bearing Gifts. "Timeo Danaos Dona Ferentes."

The Electronic Medical Record

1952—D. H., Jr.

Virtually all business and industry is now dependant on the computer. Goods and services are managed instantaneously by the electronic flow of information. In medicine, every hospital and most offices use computers for billing and financial records. Computers are everywhere—or so it seems.

But computers are not in the doctors' examining rooms or at the hospital bedsides. Instead, with a few exceptions, we are still wed to that collection of handwritten notes, typed dictations, x-ray and laboratory reports, all stuffed into a folder or binder and stored in some cabinet or rack. Despite the incredible changes in medical care in the last 40 years, our charts are not much different from those in the 1950s.

Now with the growth of managed care, there is a tremendous demand for patient records. To attain the holy grail of "cost-effective care," HMOs of all persuasions are seeking access to our charts. But with a paper-based system, access is both expensive and time consuming. Every patient has a different record for every office and hospital he has visited. This multiplicity and dispersion makes assembling a complete record very difficult. And even then, someone has to laboriously extract the data from this pile of paper. The logistics are so overwhelming that the task is essentially impossible. Given the new economic rules of today's health care, information is money. That information will soon come from the electronic medical record.

But the electronic record will also benefit physicians' delivery of care. It will always be accessible, no longer a paper charts "missing or unavailable" in the bowels of some record department. The attending physician will be able instantly to retrieve the record, and so will consultants, housestaff, and other authorized personnel, no matter their location. Complete medical histories, including laboratory, EKG, x-ray reports, and medication lists, will be accessed from hospital, office, even home. Quality of care will improve as important details, particularly allergy and medication histories, are not overlooked by consulting and covering physicians. Repetitive testing will be eliminated as results are available to all providers.

Electronic records will enhance preventive health services. Charts will be flagged to insure compliance with recommendations on cervical cytology, mammography, sigmoidoscopy, and the like. Such screens will be further customized by automatic cross referencing to individual risk factors such as age, personal and family history. In addition, the data can be studied for cost-effectiveness, for example, cholesterol or PSA measurements according to age or other variables.

Electronic charts will also improve the diagnosis and management of disease. Analysis of symptoms and physical findings, drawing on large databases, will alert the clinician to statistically-based alternative diagnoses and suggested testing. Physician-designed algorithms will suggest management strategies immediately relevant to the patient at hand and provide references to the pertinent medical literature. Alternate treatments for chronic disorders, such as diabetes, hypertension, and cancer, can be compared and evaluated. Subtle differences in treatment groups, currently undetectable in the relatively limited size of today's clinical trials, may become evident as larger patient populations are studied.

That's the good news. Unfortunately, there is bad news as well. First, an enormous capital investment will be required. To exploit fully the advantages of the electronic record, there must be multiple terminals available in every office and hospital, at all the locations where we now use a paper chart. Data entry and retrieval must be very quick, requiring hard-wired links to all community hospitals and doctors. The system must be fully compatible with the various data formats in use today, so that multiple providers, laboratories, and hospitals can download into a single record, and it must be adaptable to future enhancements. In an era of cost containment, who will finance this infrastructure?

Second, there must be an "administrator," overseeing the network. The electronic record is useless if the system crashes. There must be around-the-clock supervision and fail-safe backup capabilities. Facilities for generating, updating, and storing a paper record must be available for emergencies and for provision of data to those outside the network. Who will control this administrator, physician, hospital, or insurer?

(continued on next page)

Third, physicians must be willing and able to use the electronic record. If data entry is delegated to clerical personnel, the accuracy and quality will be jeopardized. Therefore, time and effort must be expended to teach physicians how to enter, not just retrieve, clinical information. This is the major barrier with today's software. The vast majority of clinicians predate the computer revolution; they cannot type, and they find mousing through menus tedious and slow. One of the unappreciated facts of computerization is that the speed comes with data retrieval and analysis, not with data entry. It is generally slower to enter data on a terminal than to scribble or dictate a note. The hope on the horizon is the development of practical and efficient voice recognition technology, but that is probably five to 10 years away.

Fourth, the pressure for an electronic record will come primarily from commercial and insurance interests. While the goal is to improve patient care, the subtext is to reduce costs. If they provide the necessary hardware and software, third parties will expect a return on the investment. Payors could use our data to tell us what to charge and even how to practice. In effect, we will be giving them the keys to our offices. Do we wish to cede control of our records to those whose motives are other than improved patient care?

Finally, there are issues of patient privacy. Already patients abdicate confidentiality by blanket clauses in most insurance contracts. But the unavailability of the paper record has afforded them at least some measure of privacy. The electronic record can change that. As discussed in detail by Woodward (*N Engl J Med* 1995; 333:1419-22), this should be a concern to all. Medical conditions of a highly personal nature will be available to anyone who can access the system. Does your ophthalmologist need to know you've had an abortion, or your dentist that you once drank to excess? How about your insurance company, who in addition to medical coverage may be writing life or disability policies? Who will decide the levels of password protection and how secure will they be? Thus, the widespread availability of the electronic record, clearly its major benefit, is also its greatest liability.

Of all the developing changes in health-care delivery, the evolution of the medical record is potentially the most far-reaching. It is, after all, the only tangible manifestation of the patient-physician relationship. As we transform our handwritten notes to electronic bytes, we must balance carefully the benefits of expanded information access with the loss of individual confidentiality. Public health will best be served by protecting our patients' privacy.

Dickerson Hollister, Jr., M.D.
President

Any Lessons from the 19th Century?

ROBERT U. MASSEY, M.D.

WITH the advent of a new year the amateur and aging historian in me falls to musing on how things were 50 years ago when I graduated from medical school, and then flips the years back another 50 years to compare the two half centuries. The 1890s were a time to celebrate the closing of a remarkable century, the ending of an era that, from one perspective, might just have been the height of the Renaissance. A harmless notion that I sometimes suggest to medical students is that by almost any measure of human creativity or civility, the 19th outshone the 20th century. I ask them to consider the treasures of classical music, of opera, of the novel, of poetry; to recall the amazements of technology: the railroad, the telegraph, photography, the electric motor, the generator, the internal combustion engine, the incandescent light, the phonograph, the radio, the airplane (figure the long 19th century—from the French and American revolutions to the Great War of 1914-18). Behind the technology and changing our notions of how the universe works was the genius of Faraday, Darwin, Huxley, Helmholtz, Mach, Einstein, and a hundred others. Almost any first-rate 19th-century scientist could, with a little vocabulary updating, understand 20th-century science; his 18th-century grandfather could never have understood his.

Then look at medicine: for the first time science and medicine began a working partnership, but even before that, Laennec had invented the stethoscope, Corvisart revived Auenbrugger's work on percussion, Pierre Louis introduced statistical method into medicine, and Crawford Long, Horace Wells, and W.G.T.Morton had made painless surgery possible. Wöhler synthesized urea and dealt the death blow to vitalism, opening the whole new science of biochemistry. Then came Lister with antisepsis and later aseptic surgery, Pasteur, Koch, and others, and the discovery of the microbiological causes of disease, the principles of immunity, and epidemiology placed on a firm footing. Florence Nightengale's great spirit pervades every modern hospital, her strength made nursing the keystone in the arch of good patient care. Gregor Mendel, the Augustinian monk, discovered the principles of heredity in 1865, and was himself discovered in 1900. The ophthalmoscope, the sphygmomanometer (1903), x-rays and diagnostic and therapeutic radiology, electrocardiography, (1903). Still rising in significance: acetylsalicylic acid! And on and on. To be sure the 20th century has not lacked for creativity, but credit for most of the basic principles must go to the long 19th; our century's main business has been war and the instruments of war.

In her recent book, *The De-moralization of Society: From Victorian Virtues to Modern Values*, Gertrude Himmelfarb argues that 19th-century European society, especially English and American society, worked far better than our present latter 20th-century dysfunctional variety. By almost any measure—poverty, crime, illegitimacy, divorce—19th-century numbers were better than ours, and continued to improve throughout the century in both relative and absolute terms. For example, the illegitimacy rate for the United Kingdom was 7% at midcentury, declining to 4% at the end. It began to rise in 1960, reaching 30% in 1992. The "very-poor" constituted 8.4% of the population in 1890, of which only 14% were poor by reason of substance abuse, "drunkenness." Crime, defined as indictable offenses, declined by 50% between 1857 and 1901, and did not begin to rise significantly until 1950.

Himmelfarb recalls Charles Dickens's character in *Bleak House,* Mrs. Jellyby, "who was too engrossed in the affairs of a tribe on the banks of the Niger to attend to her own brood of dirty, neglected, children." Dickens called this "telescopic morality." She continues:

> Today's moralists have that same far-away, fanatical glint in the eye—"telescopic morality" we might call it. Telescopic morality disdains the mundane values of everyday life as experienced by ordinary people—the "bourgeois values" of family, fidelity, chastity, sobriety, personal responsibility. Instead it embodies a new moral code that is more intrusive and repressive than the old because it is based not on familiar, accepted principles but on new and recondite ones, as if designed for another tribe or culture.

Maybe the "who cares," "so what" morality whose only virtue is to tolerate anything and anyone is beginning to fade except among the now tenured academics from the 1960s crowd. Columnist Ellen Goodman, commenting on the Jane Austen revival, wrote recently that "Austen may make the old-fashioned fashionable again.... Hang around Austen long enough and one picks up the accent. Funny how the quaint sounds fresh. Sense and sensibility."

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This Month's Reading in Review

TIMOTHY B. NORBECK

"What's really scary is that drive-by deliveries may be an early warning of the future of managed health care in the United States. HMOs and insurers will keep on squeezing money out of physicians and hospitals by skimping on quality care until they do some real damage to real people —and to what has been the world's best medical care."

Joan Beck, columnist for the *Chicago Tribune* (17 November 1995)

An airliner heading to South Africa was forced to turn back and make an emergency landing in Britain after 72 flatulent pigs triggered its fire alarms.... More than 300 people were also on board the South African Airways plane when the pigs' urine, gas, and body heat sparked the mid-air crisis.... Fifteen of the 72 prize stud pigs, being flown out for breeding, died of asphyxiation when halon gas was released in the cargo as part of the plane's automatic fire extinguishing system.

Forbes (September 1995)

Nearly 40% of patients admitted to long-term care facilities are malnourished; patient malnutrition rates in hospitals are estimated at 30% to 55%.

The 1995 U.S. Surgeon General's Report on Nutrition and Health

An editorial in the 11 December *Atlanta Journal & Constitution* referenced the recently adopted action by the AMA House of Delegates (5 December) to seek public support to stop the promotion of cigarettes abroad.... Quoting a Tobacco Institute spokesperson as calling the action "Un-American," the editorial stated: "No. The AMA's effort to ban U.S. tobacco exports isn't un-American. Rather, it's standing up for what's right. And that's as American as you can get."

Health Care News Today (11 December 1995)

Insurers report that January is the top disability month.... Long-term disability claims usually jump by 12%-13% in January, followed by at least three months off.... Depression jumps 16%, back injuries 22%, sprains and strains by 35%, and asthma and bronchitis, 75%.... Among the reasons given were seasonal blues, extra stress, postponing treatment, heavy eating and drinking, no exercise and hoisting grandchildren.... More people died last January than any other month.

USA Today (11 December 1995)

According to a Cornell University survey, 37% of smokers in Manhattan said they were dining out less often as a result of New York City restrictions on smoking in public places.... Responding nonsmokers said they were dining out 17% more often.

New York Times (12 November 1995)

"Drive home safely and remember: If you must drink and drive, try to do it when Senator Phil Gramm is crossing the street."

From a New Hampshire AFL-CIO Newsletter
U.S. News & World Report (13 November1995)

Diabetes has risen among Americans by 50% since 1983 and has tripled since 1958.... The increase is attributed, in part, to people aging and gaining weight.

Health Line (3 November 1995)

According to the Centers for Disease Control and Prevention and the Health Care Financing Administration, two-thirds of women over age 65 do not receive regular mammograms, despite the fact that Medicare covers the screening.... Researchers from the two agencies said only 37% of women on Medicare received mammograms in 1992 and 1993.

Reuter/Newsday (22 October 1995)

Only in America: Michael Crawn and John Campo had been friends for nearly a decade, but they stopped speaking to each other after colliding at home plate in a Sunday afternoon softball game.... Mr. Campo, on second base, tried to get home on a hit to right field, and slid into the catcher (Mr. Crawn), knocking him down.

From that seemingly innocent play grew a six-year court battle.... The jury concluded that Mr. Campo was solely responsible for Mr. Crawn's torn ligaments.... After two appeals, including one to the New Jersey Supreme Court, which sent the case back for a new trial, Mr. Campo settled the suit last fall for $22,000....The costs were apparently covered by his homeowners insurance policy.

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

The Physician Workforce Delusion

To the Editor: Market medicine's future? Thousands of unemployed doctors searching for jobs. The rest: burdened with enormous patient panels; rushing through seven-minute visits; overreaching the bounds of their competence to avoid referring; rewarded with princely incomes, so long as they take superb care (of the corporate bottom line). Meanwhile, millions of uninsured patients can't even get their seven minutes, while an army of bureaucrats battles to keep sick patients away from idle doctors and empty hospitals.

Our health-care system has gone crazy, even crazier than before. And policy wonks' debates over the physician workforce are redolent of the asylum. Good care can be parsimonious of almost everything, except time. It takes time for doctors and patients to know each other. Just because managed care firms profit by ignoring this axiom is no excuse for workforce researchers to reinforce the delusion, to make today's deranged patterns of care into the model for tomorrow.

Instead of rationing the surplus of doctors, let's plan to use the wealth of talent. Give primary care doctors like us enough time to address the psychological and social problems that our patients actually have, not just the seven minutes it takes to rule out the diseases they don't have. Use the abundance of specialist knowledge, don't dribble it out in miserly helpings. Help redundant proceduralists to redirect their efforts to needed work; don't leave them after "twenty years of schooling, working on the day shift."

No natural law says that doctors should make $190,000, nor that nighttime emergencies should be tended by the least experienced physicians. Pay us $150,000 instead and you've got the cash to give patients time to talk and doctors time to listen. Other recommendations: Instead of hiring three physician assistants to replace each lost surgical intern, hire a surgeon; use the unemployed gastroenterologists to perform universal screening sigmoidoscopies, the jobless psychiatrists to stem the epidemics of substance abuse and teenage suicide, the surplus ophthalmologists to take out both cataracts, not just the one Milliaman and Robertson now allows.

Finally, a technical comment. Thomas Dial and colleagues and Sandy Gamliel and colleagues both use odd data to forecast the future. Staff- and group-model HMOs are things of the past. The entrepreneurial future: risk-assuming physician groups. From what we've heard of their utilization rates, we won't need many PAs in hospitals; we'll barely need hospitals.[1] And specialists? We hear that McDonald's is hiring.

Steffie Woolhandler
David U. Himmelstein

Harvard Medical School
Cambridge, Massachusetts.

NOTE

1. In a speech before the Healthcare Financial Management Association (Chicago, 20 June 1995), J.S. McDonald, chief executive officer of Mullikan Medical Centers, claimed that utilization rates for his risk-assuming group are 40% below those of the average HMO.

Reprinted by permission of Project HOPE, The People-to-People Health Foundtion, *Health Affairs,* Health Affairs,7500 Old Georgetown Road, Suite 600, Bethesda, MD 20814, 801-656-7401. *Health Affairs,* Fall 1995, p 279, reference to Dial et al and Gamliel et al, *Health Affairs,* Summer 1995..

Re: "Virtues, Not Values: Medical Ethics, Not Business *Ethos*"

To the Editor: Just a brief note to express my appreciation for your article on "Virtues, Not Values: Medical Ethics, Not Business *Ethos*."

The impossibility of ethics without virtue is little realized by those who would manipulate the practice of medicine. The idea that medical services are a commodity to be traded on the market like guns and oil stocks is simply shocking—what is even more shocking is that there has been little significant resistance to this on the part of physicians who are often more concerned with getting a piece of the action than with preserving their professional values. What is even sadder is that physicians are increasingly forced to function in the name of efficiency on a "piece-work" basis—four patients to the hour, and that we are training medical students to accept this "sweat-shop" mentality as normal.

This is not to say that there isn't room for considerable trimming of the fat. The excessive growth of administration, the intrusions of the legal profession, the increase in paperwork which forces us to spend more time with charts than with patients, and the desire for excessive profits on the part of some doctors, all place a burden on the ill and

disadvantaged. However, none of these defects will be corrected without a return to the moral values of a previous era.

The craftsman is always worthy of his hire, but a craftsman who places profit ahead of excellence prostitutes his profession. If medicine is to remain a true vocation, it can never allow the profit motive to be its driving force.

Again, I thank you for your excellent article.

Rama P. Coomaraswamy, M.D.

Greenwich

A Needless Death—Doug Milner

To the Editor: A needless death—Doug Milner.

Doug Milner, a free-lance photographer and former *Dallas Times Herald* staffer, died Monday, 14 November 1995 of an allergic reaction to a wasp sting.

Thousands of other deaths (such as Lawrence Stern, the past editor of the *Washington Post*) are needless. Why are they needless?

1. Because of a lack of education concerning the use of epinephrine that can be used in the case of a reaction to an insect sting to prevent death in the event of anaphylactic reation.

2. The failure of states to pass legislation to allow laymen to administer epinephrine.

I have worked to educate laymen and get laws passed in states to allow laymen to administer epinephrine. Everyone should have an emergency epinephrine kit. As a lone crusader, I have been able to get legislation passed in 20 states. Texas, where Mr. Milner lived, is not one of these states.

Death from a severe anaphylactic reaction can occur in five minutes, which is insufficient time to get to medical aid. Doug Milner was unconscious within minutes. Epinephrine is the only treatment that will save a person suffering an anaphylactic reaction.

MAY THE DEATH OF DOUG MILNER NOT BE IN VAIN!

Claude A. Frazier, M.D.

Asheville, North Carolina

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street.

BOOK REVIEW

The Jung Cult: Origins of a Charismatic Movement. Richard C. Noll, pp 387, Princeton University Press. Price: $24.95.

"Nothing is possible without love," C.G. Jung once told Miguel Serrano, "not even the processes of alchemy, for love puts one in a mood to risk everything and not to withhold elements." Alchemy is the particular variant of occult spiritual doctrine on which Jung settled as closest to his own school of depth psychology. And, as Serrano explained, since Jung "revitalized the work of the Gnostics and the alchemists, he himself had to participate in their mysteries."

Though not mentioned in Richard Noll's *The Jung Cult*—the most scholarly critique to date of the intellectual origins of Jungian ideas—Serrano's explanation confirms Noll's painstakingly documented contention that Jung was a willing exponent of the pan-Germanic occult-mindedness that preceded and nurtured the rise of Nazism. Serrano continues,

> In philosophic alchemy, there exists the idea of the *Soror Mystica* who works with the alchemist while he mixes his substances in his retorts.... At the end, there occurs a mystic wedding.... In the processes of individuation worked out in the Jungian laboratory between the patient and the analyst, the same fusion takes place.... It is a forbidden love which can only be fulfilled outside of matrimony.... While it is true that this love does not exclude physical love, the physical becomes transformed into ritual.
>
> Consider the Tantric practices of India, in which the Siddha magicians attempted to achieve psychic union. The ritual of the Tantras is complicated and mysterious. The ... woman would usually be one of the sacred prostitutes.... Just as in alchemy lead is converted into gold ... the act of coitus was really intended to ignite the mystic fire at the base of the vertebral column.... The woman is a priestess of magic love, whose function is to ... awaken the ... chakras of the Tantric hero.... The man does not ejaculate the semen, but impregnates himself; and thus the process of creation is reversed and time is stopped.... The product of this forbidden love is the Androgyne, the Total Man, all of whose ... centers of consciousness are now awakened.
>
> Jung, the magician, had almost alone made it possible for us today to take part in those Mysteriers which seem capable of taking us back to that legendary land of the Man-God.

In 1932, Jung conducted a seminar on Tantric (or Kundalini) Yoga, the contents of which remain semi-secret to this day. (Only graduates of the Institute may purchase copies, and must sign an agreement not to reproduce their content.) The seminar participants were all current or former patients of Jung, at least one of whom—and probably more—had been Jung's own *soror mystica.* The text for the seminar was *The Serpent Power,* written in 1916 by an English aristocrat and Tantric initiate, Sir John Woodruffe, who published it under the telling, Grail-related pseudonym. "Arthur Avalon." The book remains for occultists to this day the classic study of Kundalini Yoga. Together with its companion volume, *Tantra,* it explains in detail, defends—and predicts as the coming religion of the future—sexual initiation into "higher consciousness," the transcending of good and evil, the divinity of the material world and worship of "the goddess." Handcopies of plates from this book hang at the offices of the New York branch of the Psychological Club, founded by a female patient and possible *soror mystica* of Jung's, Kristine Mann.

These 1932 seminars were led jointly by Jung and Wilhelm Hauer, founder of the so-called German Faith Movement. This movement sought to replace traditional Christianity with an Aryanized Christ, to replace worship of the Jewish God with worship of a Mother Goddess, and to replace the traditional Eucharist with occult initiation (in the spirit of the Grail legend as interpreted by Wagner). It aimed to resurrect the pagan vitality that, in line with the ideas of Nietzsche and others, purportedly had been all but killed by an all-too-Jewish Christianity. As Hauer put it, "The basic religious feelings are Union, Blessedness, and Holiness. The Christian sentiments of Sin, Guilt, and Repentance are not really religious feelings. They are artificially engendered complexes in man."

Shortly after the seminar, the German Faith Movement was officially adopted by the ascendant Nazi party as the official religion of Germany. Though Jung then somewhat distanced himself from Hauer's official position, he continued to urge Hauer that they publish together and hold joint seminars on "comparative religion."

Do modern Jungian analysts, then consider themselves the inheritors of this "new" Aryan religion? Noll acknowledges that in spite of the striking congruences of contemporary Jungianism, modern liberal theologies, "spirituality" movements, and the German Faith Movement, the vast majority of Jungian analysts today see themselves simply as mental health professionals—like any other, though with a keener than average interest in religion and matters spiritual. Few will recognize either themselves or their patients in Noll's reconstruction (nor, I dare say, in this review). Only a small minority have ever been involved in relationships such as the ones Serrano describes above and which Jung himself apparently indulged in on more than one occasion (Antonio Wolff, his mistress of 40 years and another Club and Tantric Yoga participant, was his chief extramarital *Soror Mystica*); most modern

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Jungians would not even dream of seeking such a thing. Not a few of those who have tried have been thrown out of practice altogether, by the Jungian institutes themselves.

Gnostic and occult ideas are obviously the predominant feature of Jungian thought. Nonetheless, most people remain unaware of the fact that the occult ideas on which Jung worked were hardly original discoveries of his, as Jung leaves the impression they were; such ideas were ubiquitious in the decaying culture centers of Middle Europe in the years prior to World War II. Most people remain equally unaware that occult practices also lie at the heart of Jung's own theory, clinical practice, and inner experiences. For the most part this is because these ideas have been presented in the Jungian literature, are explained in Jungian training, and when they appear in patients' dreams will be interpreted almost exclusively in symbolic terms, not literally. So, for example, an alchemical picture of a man and woman coupling in a bath—or a dream of something similar—will be taken solely as a metaphor, of a "union of opposites."

It can and should be argued that even so, these occult ideas tend to undermine moral standards. The very concept of a "union of opposites," especially at its supposedly highest level—is the dangerous Nietzschean vision found everywhere in Gnosticism, occultism, and, indeed, outright Satanism. And yet even critics of the Jungian scheme have failed to see that, however decent, sincere, and conventional are many of Jung's followers, Jung himself had found a way to live out not only symbolically but explicitly the core practices of occultism.

The veil is thick indeed. Miguel Serrano published his book on Hesse and Jung with Schocken, the Jewish house that specializes in Jewish mysticism and in the works of such great Israeli scholars as Gershom Scholem (who was likewise a sometime colleague of Jung). And yet in 1975, *Life* magazine published a photograph of the Argentine funeral of a former high-ranking Nazi officer, showing Serrano and two compatriots, in long black leather coats, offering their departed colleague the stiff-armed Nazi salute.

Only now, at a time when Jungian and Jungian-related spirituality—with its emphasis on Gnostic "wisdom," sexual freedom, goddess worship, and accommodation with evil—has infiltrated deeply into the Church (especially in the Anglican and Roman communions) has the veil at long last begun to be lifted. Though Jung has had his critics over the years, none need be taken so seriously as Noll, a clinical psychologist, fellow in the history of science at Harvard, self-described "lapsed Catholic," and former Jungian enthusiast who, in a recent interview in the *Wanderer,* now assesses Jung as the greatest threat to the Church since Julian the Apostate.

The Jung Cult provides an encyclopedic survey of the intellectual atmosphere in Middle Europe during the years that Jung formulated his psychological system. He demonstrates that most of Jung's ideas were not original, but arose elsewhere within the milieu of world-weariness, cynicism toward tradition, and enthusiasm for cultic Eastern mysticisms—mysticisms that were everywhere being hungrily swallowed in place of a Christianity widely believed by the cultural elites to be hopelessly superstitious and moribund.

Jung was a 20th-century *Naturphilosoph,* Noll demonstrates, filled with the romance of the soil. (It is de rigueur for Jungian devotees to make a pilgrimage to Jung's second home at Bollingen, where he lived as a self-described "man of the Middle Ages" and where he could therefore be his "true self.") He considered himself to have undergone a primordial experience of pagan solar initiation, but on his own, not in the context of a formal occult society or ritual. A prominent influence on Jung, Ernst Haeckl, belonged to the Thule Society, an explicitly occult group that numbered among its members many of Hitler's intimates, including Julius Streicher and Rudoph Hess. (In time the society came to see in Hitler the "Aryan Messiah" long prophesied by occultists.) But Jung himself would never have dreamed of joining such a society, however many of its ideas he might incorporate into his evolving worldview. What was truly original, and brilliantly successful, was the way in which Jung wedded his own personal experience to the racial occult theories then to be found everywhere, and to syncretize the construction under the aegis of psychoanalysis.

Jung's relationship to Wilhelm Hauer provides a good example of how Jung related to the occult spirit wherever he found it. Hauer, formerly a Protestant churchman, aimed to debunk once and for all what Goethe called the "fairy tale" of Christianity. But like many in those days, he was no more willing to accept a completely demythologized Freudian psychoanalysis. So he set about to establish an alternative, becoming one of the founders of the Neopagan movement in Germany, a movement whose headquarters was Tübingen, birthplace of the "higher criticism."

Jung took these neopagan and Eastern ideas and wedded them to the newly emerging, more rational-seeming "science" of psychoanalytic psychiatry. He thereby created a unique vehicle for occult ideas to enter the culture—a vehicle that carried the respectability of a clinical profession and avoided the secret-handshake pomposity of the typical occult circle.

But an important reason for the power of the Jungian movement is precisely how un-secret Jung's psychiatric reformulations of occult ideas made it possible for

Jungianism to be, especially in a world starved for spirituality. A conspiratorial model was and is completely unnecessary to understand Jung; indeed, its absence provides the most obvious defense against the accusation that Jung was an occultist at all. Furthermore, the influence of Jung's "cult" lies almost wholly in the world of ideas and does not flow from any financial or political power it wields (which is negligible, contrary to claims in the late parts of Noll's book).

In Noll's reading, Jung stands in a long-developing line of German-speaking European intellectuals who in the years prior to World War II were actively dismantling the remains of a nearly dead Christianity and rebuilding a "new" religion to take its place. The core "mystery" to be grasped by the devotees of this religion was "identification with the sun-god." A theistic god was a fairy tale: the true god lies within "the Self." To experience Her/Him is to have grasped the secret of immortality. Such a "faith" is really no faith at all, but a form of experience-based knowledge, superior because it requires no sacrifice of the intellect, as do superstitious "faiths."

The Nazis implemented some of these ideas, heretofore known and accepted only by an elite, in the context of a mass political movement. Jung therefore spoke of the movement rather approvingly at first. Eventually he came to see some of its dangers—warning that the Nazis had, as it were, hijacked the spiritual revolution and turned it to dire ends. They took too direct and too severe an approach to solving problems, including the problem universally recognized as crucial among occultist: how the "over-civilized" Jews and their ideas (including Christianity) tend to drain the life-force from the more youthfully mystic Aryans.

Jung's Psychological Club was more moderate in its approach to this same problem: it merely maintained a secret appendix to its bylaws, known only to Jung himself and to his innermost circle, that capped the percentage of Jews allowed membership.

But the war and the attempted extermination of the Jews for racial/mystic reasons rather poisoned the occult well for everyone. Jung did eventually repudiate the Nazis themselves (he even removed the Jewish quota from the club—although it took him until four years after the extermination camps were revealed to do so). Against accusations of anit-Semitism and Nazi sympathizing, he was able more-or-less successfully to defend himself, largely because he had so many Jewish colleagues and disciples who could testify to his loyalty and assistance. But it remains true that many of the doctrines the Nazis adopted as their own were indeed central to Jung's worldview.

In Noll's opinion, Jung—obliged to distance himself from the more openly Aryan occult theories of which he was most fond prior to the war—found alchemy a more suitable, less tainted form of occult expression. Though Jung had been well aware of alchemy at least since the twenties, he conentrated on it only after the war.

Jung, in other words, was not a true "proto-Nazi," according to Noll, because he had no political agenda, but he drank deeply at the same Arcadian fountain as they. "The evidence is compelling that Jung's work arose from the same Central European cauldron of neopagan, Nietzschean, mystical hereditarian, volkisch utopianism out of which National Socialism arose."

This is the burden of Noll's book, and he has done a remarkable job of documenting his case. But for all the dark material he has unearthed and pieced together, I think he fails to draw the most important conclusions. The material cries out for interpretation, and indeed, in the later parts of the book Noll's tone changes dramatically and becomes directly hostile.

Yet even the criticism Noll allows himself misses the mark. Jungian psychology has become a psychospiritual Amway-style franchise, Noll contends, driven primarily by money. Religious seekers are promised what is tantamount to (but not called) occult initiation, and thereby suckered into lengthy "analysis" at exorbitant cost. Many become trainees themselves, in hopes of recouping their losses by moving up the food chain. The sharpest of these in time become training analysts who have earned the right to feed on the most complicant of prey: new trainees.

There is a certain amount of cynical truth to this take on the official Jungian movement—I have seen it at work myself from within. But the same degree of self-interest is at work in every professional guild: organized clinical psychology (Noll's profession), psychiatry (my own), social work, law, and so on. The master-apprentice system itself is built upon such a process and is inevitably open to a common set of abuses.

Abuses, of course, tend to grow in proportion to the extent that the criteria for success within any given guild are subjective rather than objective; for all the loud protestations of objectivity, the criteria for success within *every* mental health profession are notoriously subjective.

Such subjectivity is at work within the Jungian domain and within organized psychiatry, in both of which candidates may be accepted or rejected for training more because of ideological compliance than genuine qualification. Psychiatry tends increasingly to seek and enforce political correctness among its members; Jungians do too, nowadays to a greater extent than even psychiatry, in spite of Jung's superficial conservatism.

The fact is that as a subset of the mental health professions, the Jungians have evolved into a rather typical school of psychotherapy, on balance no better or worse than others. Training is now heavily dependent upon a cross-section of theoretical models and practice schemata, by no means purely Jungian. Neo-Freudians, Kohutian

self-psychologists, British object-relations theorists, standard DSMIV psychiatric diagnosticians, and others now have honored and time-consuming places in the typical Jungian curriculum.

The original occult initiation process envisioned and propagated by Jung and perhaps actually experienced by him and by some of his inner core of disciples has for the most part disappeared. This is certainly true of that process as it may have been acted out concretely, and not just symbolically—a rising tide of undue familiarity cases (to which other mental health professions have been similarly subject) has all but eliminated the possibility that "mystic marriages" could be safely consummated in bed. Newly devised ethics codes make taboo even modest self-revelation by analysts. In other words, it is no longer professionally prudent for Jungian analysts to engage in the kind of "mutual individuation" romanticized by Jung, however much Jungian rhetoric may claim that such a process still occurs. In short, the Jungian professional guild has become considerably less rogue than Noll tries to paint it.

The real problem is not the Jungian guild, it is Jungian spirituality, and this touches on Noll's assessment that Jung was not really a "proto-Nazi." That may be true, but occult ideas provided the soil in which Nazi-like phenomena flourished, and one may argue that not only *can* they thus flourish, but that given the sufficient tilling of that particular soil they almost certainly *will.*

Jung was not himself a major influence in the outburst of occult-mindedness in prewar Europe; he was rather the recipient of this influence from others, as Noll documents. But having absorbed, digested, and resynthesized in brilliant fashion what he received, he has become its major fount in its postwar re-eruption—an eruption no longer confined to Middle Europe and a few English aristocrats and civil servants, but spread out across the globe, especially to America. As Jung himself foretold 60 years ago in his essay on the Norse god Wotan and Nazi Germany:

> National Socialism [is] ... not ... the last word. Things must be concealed in the background which we cannot imagine at present, but we may expect them to appear in the course of the next few years or decades. Wotan's reawakening is a stepping back into the past; the stream was dammed up.... But the obstruction will not last forever ... the water will overleap the obstacle.

Much of what we now see happening in the domains of religion and spirituality and culture can be laid at Jung's doorstep—the modern amalgam of goddess worship and polytheism; the replacement of morality-oriented Jewish and Christian worship with ancient pagan initiation rituals; resurgent pantheism in scientific and pseudo-scientific guise; and above all a brutal moral relativism (that is, the reconciliation of good and evil).

In short, in place of his rather feckless attack on the Jungian "guild," an expanded version of Noll's off-the-cuff remark concerning Jung and Julian the Apostate belongs in his book. For it is Jung's *spiritual* influence that is the real danger, not the rather modest financial success of his followers' practices. The latter has only followed from the more important spiritual effects, not from the cleverness of its organization and management.

How dangerous are these spiritual effects? Heinrich Heine, the 19th-century German-Christian-Jewish poet, peered a century into his nation's future and saw the result of neopagan revisionings of religious tradition. His words should be a caution to us as well:

> Should ever that taming talisman break—the Cross—then will come roaring back the wild madness of the ancient warriors, with all their insane, Berserker rage, of whom our Nordic poets speak and sing. That talisman is now already crumbling, and the day is not far off when it shall break apart entirely. On that day, the old stone gods will rise from their long forgotten wreckage and rub from their eyes the dust of a thousand years' sleep. At long last leaping to life, Thor with his giant hammer will crush the gothic cathedrals. And laugh not at my forebodings, the advice of a dreamer who warns you away from the ... *Naturphilosphen.* No, laugh not at the visionary who knows that in the realm of phenomena comes soon the revolution that has already taken place in the realm of spirit. For thought goes before deed as lightning before thunder. There will be played in Germany a play compared to which the French Revolution was but an innocent idyll.

Jeffrey Satinover, M.D.
Past-president of the C.G. Jung Foundation of New York, is a psychiatrist in private practice in Westport.

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

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BC/BE internal medicine (with or without subspecialty) to join busy internist/medical oncologist. Practice admits patients to the Griffin Hospital in Derby and Hospital of St. Raphael in New Haven. Position available immediately. Excellent salary, on call, and benefits package. Call Mary-Lou Ghiroli at (203) 735-8783 or fax C.V. to (203) 732-3692.

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Currently seeking full-time/part-time (IM/FP) BC/BE physician with focus on women's issues to join a multi-service medical facility providing outpatient preventive medicine and primary care exclusively to women. The medical practice consists of two full-time primary care physicians, an allergy and asthma specialist, an adolescent medicine specialist, a nurse practitioner in adult medicine and gynecology, a nutritionist with individual weight loss and cholesterol reduction programs, three psychotherapists, ACR accredited mammography, ultrasound, massage therapy, and adjoining laboratory. Women's Care is proud of its comprehensive approach to medical care and health care maintenance and welcomes you to join our team of health care professionals committed to women's issues and education. For more information, contact: Caryn Nesbitt, M.D., Medical Director, 85 Poheganut Dr., Groton, CT 06340, telephone (860) 448-6303.

Physician wanted to work part-time in primary care at a university health services setting. No on call, no weekends, no holidays, summers off. Must have own malpractice insurance. Please send CV to: University of New Haven, 300 Orange Ave., West Haven, CT 06516, Attn: Health Services, Paula Cappuccia, Director. For more information call (203) 932-7079.

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PATH, P.C. (Positive Alternatives to Hospitalization), a rapidly growing, multi-disciplinary behavioral health company is looking for a BC psychiatrist. Part-time position; managed care experience desirable; experience in psychopharmacology essential. Competitive salary and benefit package. Send C.V. to: John E. Kelleher, M.D., Medical Director, PATH, P.C., 970 Farmington Ave., W. Hartford, CT 06032. Telephone (203) 561-6710.

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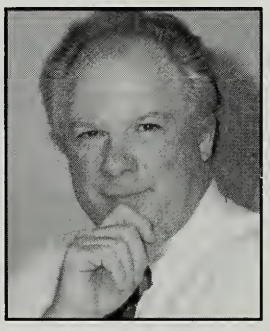

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Family History of Breast and Ovarian Cancer Among Breast-Cancer Patients in the Connecticut Tumor Registry

ANTHONY P. POLEDNAK, PH.D. AND JOHN T. FLANNERY, B.S.

ABSTRACT — Using the database of the population-based Connecticut Tumor Registry (CTR), along with the supplemental data obtained from Connecticut hospitals, 111 cases reporting one or more first-degree relatives with breast and/or ovarian cancer were identified among 1,077 incident female breast-cancer patients diagnosed at age <60 years in 1992. Stage at diagnosis and histology for invasive cancers did not differ between 99 family history-positive cases and 320 cases with no family history of any cancer. The CTR could be useful in clinical and epidemiologic studies involving inherited susceptibility to breast-cancer.

Introduction

AMONG the different genes known to be involved in breast-cancer susceptibility, the BRCA1 (but not the BRCA2) gene is associated with ovarian cancer in some families; other genes include those involved in Li-Fraumeni syndrome and ataxia-telangiectasia.[1-3] The association between breast-cancer risk and family history of breast-ovarian cancer is strongest at age <60 years, although the absolute number of "hereditary" cases is higher in older women (due to increasing breast cancer incidence rates with rising age).[1,4] While the great majority of breast cancers are due to acquired mutations, about one in 200 women may develop breast cancer due to inherited susceptibility.[1]

In a "guide for clinicians" for evaluating family history of breast cancer, families were defined as "high" risk if two or more first-degree relatives had breast and/or ovarian cancer and early age at diagnosis, and "moderate" risk if only "one or two relatives" (degree of relationship unspecified) had breast cancer ("often postmenopausal") in the absence of other cancers (especially ovarian).[2] Studies of pedigrees[4,5] and genetic heterogeneity in breast cancer[6] could be enhanced by collaborative studies among cancer registries. Prognostic factors and survival rates could be examined for patients with *vs* without strong family histories of cancer, for use in clinical counseling.[2] Family members as yet undiagnosed with breast-ovarian cancer could be identified and registered[7] for studies of behavior related to breast-cancer screening,[8] primary prevention, treatment choices, and use of genetic tests for breast-cancer susceptibility genes (when these tests become commercially available).[9] This paper assessed the potential utility of the population-based Connecticut Tumor Registry (CTR) in identifying moderate- or high-risk families.

Materials and Methods

The CTR has been part of the National Cancer Institute's (NCI's) Surveillance, Epidemiology and End Results (SEER) Program since its inception in 1973. While family history of cancer is not part of the SEER database, the CTR has attempted to collect this information (from hospitals) for all cases diagnosed since 1973; the CTR's Tumor Record Abstract has included an open-ended item titled "family history of cancer." On computerized reporting

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forms that are being used increasingly by hospitals, an item on family history of cancer may be absent or limited to a "yes" or "no" response (without further details); however, additional information may be available in hospital records.

This study included all 1,077 Connecticut residents diagnosed at age <60 years with female breast cancer (in situ or invasive) in 1992, the latest year for which CTR data were considered complete. Patients with family history coded as unknown (N=471, or 43.7%), or with a "positive" family history but unknown cancer site(s) (N=39) coded in the CTR, were identified. After excluding 12 cases diagnosed at hospitals outside Connecticut, queries were sent to hospitals (in April-May 1995) requesting further information on family history of cancer; follow-up letters were sent to nonrespondents to the first mailing. In addition, CTR hard-copy records were examined for patients with a "positive" family history of breast cancer, to obtain details on specific relatives involved, and for patients with a family history of cancer other than breast, to determine if ovarian cancer was involved.

Results

All hospitals responded to queries, although some were able to provide little additional information. The number of patients with a completely unknown family history of cancer was reduced from 471 to 336 (or 31.2% of 1,077). Based on the additional information provided by hospitals and a review of individual CTR records, 111 (10.3% of 1,077, or 15.0% of 741 cases with known family history) had at least one first-degree relative with breast and/or ovarian cancer (Table 1). Another 16 patients had a family history of breast cancer, but no information was available on the degree of relationship involved.

Four cases (probands) had only ovarian (and no breast) cancer in first-degree relatives. One proband's sister was reportedly diagnosed with breast-ovarian cancer; her father had died of breast cancer, which was verified in the CTR by using the proband's maiden name (which is sometimes available in CTR records). Another proband (born outside Connecticut) reportedly had a twin brother with breast cancer (which could not be verified).

Mean age at diagnosis was slightly lower, and the proportion diagnosed at age <40 years was higher, in the 111 breast-ovarian family-history positive cases than in the 371 cases reportedly having no family history of cancer in any relative. Age(s) at diagnosis or death of the affected relative(s) of probands were rarely reported to the CTR.

Stage at diagnosis (extent of disease), defined as "early" (ie, in situ or localized to the breast) and "late" (spread to regional or distant nodes and/or tissues/organs), was similar for the two groups (Table 1). For invasive breast cancers, the distribution of histologic types was also similar for the 99 family-history-positive cases and the 320 cases with no family history of any cancer (Table 2).

Table 1.—Family History (First-Degree Relatives) among Breast-Cancer Patients (Connecticut Residents) Diagnosed in 1992 at Age <60 Years

		Stage		Age	
Family history of cancer	**No.**	**Early (%)**	**Late (%)**	**<40 yrs. (%)**	**Mean (yrs.)**
Proband plus breast cancer in:					
Mother only	73	69.9	28.8	17.8	46.8
Sister only	25 (2)[a]	68.0	28.0	12.0	49.0
Daughter	1	(0.0)	(100.0)	(0)	—
Mother + sister	6	66.7	33.3	16.7	45.5
Two sisters	2	100.0	0.0	50.0	47.0
Proband plus ovarian cancer only[b]	4	50.0	50.0	0.0	51.5
Total, breast/ovary first degree	111	68.5	29.7	16.7	47.5
No family history of any cancer	371	68.2	31.5	12.9	48.1

[a]Two cases had ovarian cancer in a first-degree relative.
[b]No history of breast cancer reported.
Notes: "Early" stage refers to in situ or local; "late" stage includes regional or distant (metastatic) cancers; stage was unknown for three cases. "Proband" refers to the breast-cancer patient reported to the registry, whose family history of cancer (pedigree) was queried.

Table 2. Distribution of Histologic Type of Breast Cancer (Invasive Only) Diagnosed at Age <60 Years in 1992 in Two Groups of Probands defined by Family History (FH) of Breast/Ovarian Cancer

Histology (ICD-O Code)	No FH of cancer No.	%	FH of breast/ovary in first-degree No.	%
Adenocarcinoma				
NOS (8140)	5	1.6	3	3.0
Infiltrating duct NOS (8500)	261	81.6	85	85.9
Lobular (8520-8521)	11	3.4	4	4.0
Infiltrative + lobular (mixed) (8522)	8	2.5	1	1.0
Comedocarcinoma (8501)	7	2.2	2	2.0
Tubular (8211)	3	0.9	2	2.0
Cribiform (8201)	1	0.3	o	0.0
Inflammatory (8530)	4	1.3	0	0.0
Paget's (8540-8543)	3	0.9	0	0.0
Mucinous (8480-8481)	3	0.9	0	0.0
Medullary carcinoma (8510-8512)	12	3.7	1	1.0
Unspecified carcinoma (8000-8001)	2	0.6	1	1.0
Total	320	100.0	99	100.0

Notes: In situ cancers (included in Table 1) were excluded. None of the differences between the two groups was statistically significant ($P>.05$, χ^2 test).

Discussion

The proportion of breast-cancer patients with some information on family history of cancer (ie, 69%) is comparable to response rates in case-control studies involving direct interviews of patients or surrogates.[10,11] Family history of breast cancer among breast-cancer patients may be slightly overreported due to confusion with benign breast disease.[12] Validation studies are needed in the CTR. Also needed are efforts to reduce the proportion of CTR cases with unknown family history, within the constraints imposed by limited time and/or staff in hospital tumor registries, along with fragmentation of medical records of cancer patients;[13] more complete information on family history may be available in the records of managed-care organizations and primary-care physicians.[13] As with occupational[14] and smoking histories, the extent of medical education regarding the importance of including information on family history of cancer in medical records may be a crucial factor.

On the basis of this study of breast-cancer patients diagnosed in a single year (at age <60 years), large numbers of families at high or moderate risk of breast-ovarian cancer could be identified. Unaffected female family members (if any) of the 111 cases in Table 1 have two or more first-degree relatives with breast-ovarian cancer. Contacting breast-cancer patients (after obtaining physician consent) would be required to obtain detailed pedigrees for these families, including those with both male and female breast cancers,[1,15] and ages at diagnosis of affected relatives (rarely available in the CTR). Ages at diagnosis of affected relatives are used in a model that predicts risk of breast-cancer in unaffected women,[16] although not in another model designed for women screened annually by mammography,[17] and in distinguishing families at high *vs* moderate risk for breast-ovarian cancer.[2] Names and addresses of relatives (as yet unaffected with breast-ovarian cancer) could be obtained from probands,[8] for various studies and/or interventions. Protection of confidentiality of information on family history of cancer (eg, with regard to potential impact on health insurance coverage)[18,19] should be a major concern in such studies, and with the anticipated increase in genetic testing among families with hereditary breast and ovarian cancer.[9,20]

The CTR could facilitate studies of the prognostic features of breast cancers in patients with *vs* without a family history of breast-ovarian cancer. Survival is related to histologic type, as well as stage at diagnosis; for

example, patients with lobular and (mixed) ductal-lobular carcinomas reportedly show better survival relative to those with other histologic findings.[21] In this study, the distributions of stage at diagnosis and histology did not differ between the probands with a first-degree relative(s) with breast and/or ovarian cancer and breast-cancer patients with no family history of any cancer (Table 2), but only large differences could be detected and studies using larger samples are needed. While "hereditary" and "sporadic" breast cancers have been regarded as having a similar prognosis,[22] hereditary breast cancers specifically associated with the BRCA1 gene may have relatively faster growth rates[23] and higher grade (associated with poorer prognosis).[24] Cancer registries (such as the CTR) lacking facilities for genetic analyses of tumor or blood samples could collaborate with other institutions for studies of prognosis associated with cancers involving specific breast-cancer susceptibility genes.

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Review of the Clinical Basis and Protocol for Epidural Endoscopy

LLOYD R. SABERSKI, M.D. AND LUKE M. KITAHATA, M.D., PH.D.

ABSTRACT—Epidural endoscopy is a minimally invasive technology that is now in active clinical trials. This new technique allows the operator to visualize directly the epidural space and contiguous structures, thus allowing for detailed examination leading to a better understanding of the role of epidural adhesion in the development of sciatica.

THE initial epidural endoscopy protocol was designed in our department to assess outcome and safety of epidural steroid injections done with fiberoptic assistance in patients with persistent lumbar radiculopathy not responsive to physical therapy or caudal epidural injections. Despite the use of 30-50 mL of saline many injections failed to provide relief. The premise of the initial study was that failure of an epidural injection resulted from failure to deliver the medication to the required area. This might result from a proliferation of connective tissue (scar), the presence of fat, or other morphologic anomalies around the nerve roots in question.

Lending support to the study's premise was the work of Odendaal and van Aswegen.[1] They injected a radionuclide admixture into the lumbar epidural space of patients with and without previous laminectomy. By following the radioactive tracer they were able to demonstrate poor caudal spread of injectate in those patients who had had previous laminectomies. On the other hand, in the nonoperated control group, there was an even spread of fluid throughout lumbar and sacral nerve roots. Thus, an injection into the lumbar epidural space would take the pathway of least resistance and might not deliver intended steroids to sacral nerve roots. For these reasons Cyriax, during the 1960s through the 1980s, advocated caudal injections.[2] Such epidural injections via the sacral hiatus went cephalad, although some of the injectate escaped through sacral foramina. Using 25-50 mL volumes, containing local anesthetic, normal saline, and steroid, he claimed lasting results in more than 40% of his patients. These results were possibly secondary to the enhanced spread of steroid, from the forces generated intradurally and epidurally from the larger volumes used. The effect of local anesthetic (procaine) on long-term outcome is unknown, but its role cannot be excluded.

More recently the work of Racz suggested that lysis of epidural adhesions is of benefit to many refractory lumbar radiculopathies. His pioneering technique involved placing a catheter through the sacral hiatus into the epidural space close to the root or adhesion in question as shown by an epidurogram. A total volume of 30-40 mL of a local anesthetic, steroid, and nonionic contrast material was injected. The results showed significant variability between study groups, likely a consequence of the heterogeneous nature of persistent lumbar radiculopathy. Nonetheless, approximately 50% of the patients had marked improvement as measured by decreased analgesic medication, enhanced function, and reduced visual analogue scores for pain for one to six months. He concluded that the overlooked epidural adhesions could cause pain from compression and irritation of nerves.[3,4] With epiduroscopy, it is envisioned that a three-dimensional color view of the

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adhesion and adjacent anatomy will afford the operator an advantage over two dimensional black-and-white fluoroscopic projections (epidurograms).

The selection of patients for study is critical. Patients considered for the study had lumbar radiculopathy and were not candidates for neurosurgical intervention. Lumbar radiculopathy is defined as neuropathic pain in the distribution of one or more roots of the lumbar plexus with a positive sciatic tension sign. Care is taken to ensure that the patient is not suffering from pseudoradiculopathy, which may present as pain in the sciatic distribution. Pseudoradiculopathy may be either myofascial or biomechanical in nature. A careful neurologic examination is performed including sensory testing to light touch, sharp, cold, two-point discrimination, vibration, and reflexes. Tests of large fiber function, electromyography/nerve conduction velocities (EMG/NCV), will be obtained as well as a lumbar magnetic resonance scan for morphologic assessment.

Only those patients with lumbar radiculopathy selected for physical therapy with adjuvant caudal epidural steroid injections will be considered for entry into the study. A series of two to three volumetric caudal epidural steroid injections will be given as an adjuvant to physical therapy at biweekly intervals. (For the initial study, patients remain on all prescribed medication.) Each patient will receive 60 mg of triamcinalone diacetate in 10 mL of normal saline, followed by an additional 15-40 mL of normal saline. The final volume injected is individually determined and is dependent upon the patient's response. A close dialogue with the patient constantly assesses how he feels in reference to pressure and pain. If either severe pressure or pain is noted, the syringe is disconnected immediately from the needle, and the epidural pressure is allowed to equilibrate with ambient atmospheric pressure. If the pain disappears promptly, the syringe can be reattached and additional normal saline injected. However, if pain or pressure return when injection is resumed, then epidural compliance is limited, and no further volume should be injected.

It is likely that the operator may be able to increase the volume injected with each of the subsequent caudal epidural injections. An injection rate of 1 mL per second is recommended; we have shown that rapid injection of fluid (> 1 cc/sec) is always associated with very high peak epidural pressures, at times in excess of 300 mmHg. These peak pressures are mostly the result of rapid injection, but are also affected by the compliance of the epidural space. The peak pressures fall off to preinjection levels abruptly with disconnection of the syringe when the total volumes are less than 30-40 mL.[5] For this reason five 10 mL syringes are prepared at the start of the procedure, so that after each 10 mL increment of normal saline, the syringe must be disconnected and changed. Work by Serpell et al[5] has shown that a sustained pressure applied epidurally is transmitted intrathecally and could potentially compromise perfusion or cause barotrauma at locations remote from the injection. They noted that there was an initial escape of fluid by leakage into the large sacral root foramina and sheaths. However after achieving capacity (around 20 cc in ewes) there was an abrupt increase in CSF pressures with each injection. The range was variable, differing with each study animal and CNS compliance. They concluded that saline installation into the epidural space results in eventual overload of CSF pressure volume compliance. The CNS compliance is variable, but seems to deteriorate after surgery and thus theoretically predisposes the subject to neurologically dangerous pressures. They recommend continuous monitoring of the CSF pressures. However, Cyriax reported that after 50,000 50 mL volumetric caudal epidural injections in his patients, there had been no major long-term complications.[7]

After two caudal epidural injections (beginning of week five) a physical examination with special attention to sciatic tension is performed. If there is objective improvement on physical examination as well as subjective improvement in pain as assessed using a visual analog scale, then the patient will finish the course of prescribed physical therapy. If there is modest improvement with both the physical examination and subjective description, then a third caudal epidural injection should be performed. In those patients persisting with symptomatic radiculopathy after the third caudal epidural injection, or after the second injection if there was no improvement, epiduroscopy can be performed. The fiberoptic should be directed towards the clinically symptomatic nerve root.

Volumetric caudal injections and epiduroscopy should be avoided in those patients with a coagulopathy, infection, raised intracranial pressure, space occupying lesion of the CNS, and those with cerebrovascular disease. In addition, patients already manifesting bladder and bowel dysfunction as a complication of sacral nerve injury, may be at increased risk to further injury during or after the volumetric injections.

Epiduroscopy was initially the vision of Michael Burman in 1931.[8] Unfortunately the available technology did not make its use practical. By the 1940s light sources had been sufficiently developed by pioneers like Pool and others that myeloscopy was used prior to spinal operations. The lack of photographic equipment, the presence of hot incandescent lighting, and the rigid metal scope limited the use of this procedure. The introduction of minimally invasive technologies such as myelography, computerized tomography, and magnetic resonance imaging also delayed development of the field. However, the advent of the fiberoptic light source, followed by develop-

ment of fiberoptic endoscopes with video taping capabilities, set the stage for the modern era of spinal endoscopy. What remains to be determined is whether such endocopic access to the central nervous system is practical for clinical practice. The study to date shows that the epidural space may be accessed safely using flexible fiberoptic catheters via the sacral hiatus and yield three-dimensional color images of the contents. In addition, the steerable handle in conjunction with gentle rotatory movements allows the fiberoptic catheter to be steered towards structures of interest. This technique allows for examination of specific nerve roots and injection of a steroid, normal saline, and local anesthetic preparations onto epidural adhesions and roots. Further study is needed to see whether this technique holds advantage over currently practiced fluoroscopic techniques. There is reason to believe, however, that directed vision epidural injections will play a significant role in the future management of patients with radiculopathy, especially after previous surgery. Epiduroscopy may not be limited to the role of directed injection of epidural steroids. There is the potential for performing closed procedures, including the removal of extradural scar, drainage of cysts, biopsies, and retrieval of foreign bodies. As the technology grows, so will the ability to provide new, safe, and effective therapies.

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Mechanical Mitral Valve Prosthesis Dysfunction From Thrombus: Transesophageal Echocardiography Has Limitations

MARK A. PERAZELLA, M.D., WILLIAM FREDERICK, PH.D., M.D., GREGORY K. BULLER, M.D., AND STEPHEN WIDMAN, M.D.

ABSTRACT—Transesophageal echocardiography (TEE) is a useful clinical tool for the evaluation of a variety of cardiovascular lesions. In particular, TEE has been demonstrated to be a better diagnostic modality in the visualization of mechanical prosthetic heart valves than transthoracic echo-cardiography (TTE). Furthermore, TEE is noted to be particularly useful to evaluate the atrial surface of mitral prostheses, the usual location of thrombi or vegetations. We herein describe a patient with a dysfunctional St. Jude's mitral prosthesis resulting from an organized thrombus who underwent both TTE and TEE without visualization of the thrombus.

Introduction

Assessment of mechanical prosthetic valve function and suspected prosthetic valve dysfunction is often clinically difficult when there is coexistant cardiovascular disease. Transthoracic two-dimensional and Doppler echocardiography have provided a more reliable method for assessment and evaluation of mitral prosthetic valve function. However, accurate diagnosis of mitral prosthesis malfunction may be limited by patient characteristics (obesity, chest deformity, or emphysema) as well as prosthetic valve material (acoustic shadowing). The proximity of the esophagus to the left atrium improves the signal quality of transesophageal echocardiography (TEE), avoids attenuation of the ultrasound beams by prosthetic valve material, and circumvents problematic patient characteristics.[1] It appears that TEE provides more anatomical and functional information about mitral prostheses than does transthoracic echocardiography.[1-4] In particular, TEE is noted to be useful in the evaluation of the atrial surface of the mitral prosthesis, the typical location of thrombi and vegetations.[1] Hence, TEE provides an excellent noninvasive means of visualizing mechanical mitral prostheses. We present an unfortunate patient with a dysfunctional St. Jude's mitral prosthesis, the result of an organized thrombus, who underwent both TEE and transthoracic echocardiography without antemortum diagnosis of thrombus formation.

Case Report

A 59-year-old female with a history of rheumatic heart disease and a previous St. Jude's mitral valve replacement presented with a history of several days of progressively worsening dyspnea. In addition, she noted othopnea and paroxsmal nocturnal dyspnea.

She had been discharged one week earlier from the hospital after admission for laparoscopic cholecystectomy. That hospitalization was complicated by postoperative congestive heart failure and acute renal failure. Treatment with diuretics resolved her symptoms of congestive heart failure and she was discharged home. Three days following discharge, the patient noted the devlopment of dyspnea but denied chest pain, palpitations, dizziness, or syncope. She subsequently presented to the emergency department with the above presenting complaints.

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Her past medical history included rheumatic heart disease with mitral stenosis. She had had a mitral valve replacement with a St. Jude's valve five years prior to admission. She was a 40-pack-a-year cigarette smoker and did not abuse alcohol or drugs. Her medications included warfarin 5.0 mg daily, digoxin 0.125 mg daily, and furosemide 40 mg daily.

Physical examination revealed a blood pressure of 125/75 mmHg, pulse of 90, respirations of 28, and normal temperature. Head and neck examination revealed jugular venous distension to the angle of the jaw but no carotid bruits. Lung examination revealed bilateral crackling rales over approximately one-half the chest posteriorally, while heart examination was notable for a mechanical valve sound and a 2/6 holosystolic murmur at the apex radiating diffusely over the heart. She had a healing wound in the right upper quadrant of her abdomen. There was a trace of pitting ankle edema. Neurological examination was unremarkable.

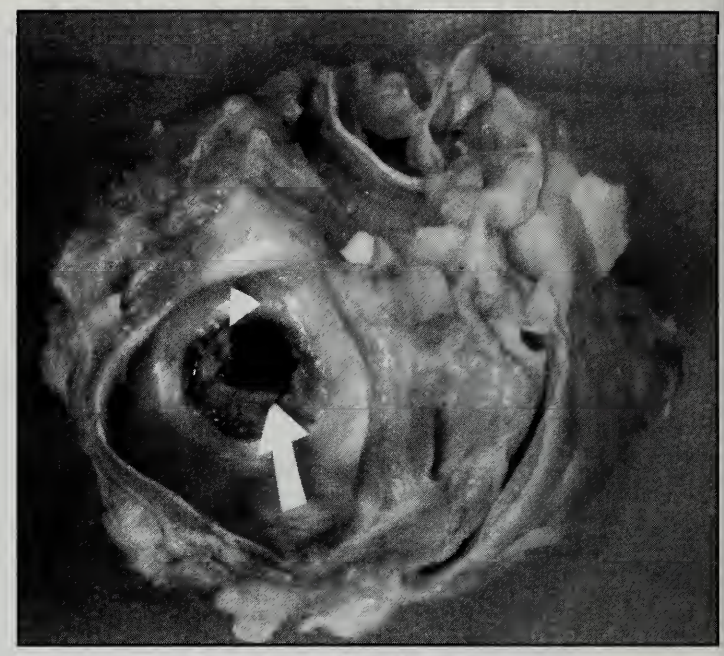

Figure 1.—View of the atrial surface of the St. Jude's mitral prosthetic valve. The arrow points out the thrombus covering the surface of the posterior valve leaflet while the arrowhead denotes the limb-like projection of thrombus which immobilized the anterior leaflet preventing full closure and resulting in mitral regurgitation.

Laboratory data revealed a normal complete blood count and differential, a serum potassium of 5.0 mmol/L, and a serum bicarbonate of 18 mmol/L. The blood urea nitrogen was 23.2 mmol/L (65 mg/dL) while the serum creatinine was 221 μmol L (2.5 mg/dL). The partial thromboplastin time was normal while the prothrombin time was 17.7 seconds. Serum calcium, phosphorus, magnesium, and uric acid were all within normal limits. The electrocardiogram revealed normal sinus rhythm at 94 with T wave inversions in leads V_4 through V_6. No Q waves or ST elevations or depressions were present. Chest roentgenogram showed marked interstitial edema and small bilateral pleural effusion. Urinalysis revealed a specific gravity of 1.015 with no protein, glucose, or blood on dipstick. The urine sediment revealed scattered renal tubular cells and a few granular casts.

The patient was admitted with a diagnosis of congestive heart failure and renal failure. Treatment was unsuccessful despite using 200 mg of intravenous bolus furosemide, 500 mg of intravenous chlorthiazide, intravenous dobutamine, and renal-dose dopamine. A TTE with Doppler revealed an elevated right ventricular systolic pressure (54 mmHg), a mitral valve area of 0.7 cm^2 with a gradient of 46 mmHg, and a question of mitral regurgitation. A biplane TEE with Doppler was subsequently performed and showed moderate mitral regurgitation and a mitral valve area of 1.1 cm^2 with a gradient of 25 mmHg. No evidence of thrombus or vegetations was present on either study. Estimated left ventricular function was 35%. The patient continued to deteriorate and required intubation and mechanical ventilation. Swan-Ganz catheterization revealed a pulmonary artery pressure of 62 mmHg while the pulmonary capillary wedge pressure was 44 mmHg. A right femoral vein dual-lumen hemodialysis catheter was placed and ultrafiltration was begun. However, towards the end of the ultrafiltration procedure, the patient developed bradycardia followed by asystole. Despite maximal hemodynamic support and advanced cardiac life support protocol, the patient expired.

At autopsy, exposure of the prosthetic mitral valve revealed a flat, sheet-like thrombus (1-2 mm thick) covering both surfaces and completely immobilizing the posterior valve leaflet (Fig. 1). A small peripheral limb-like projection of the thrombus passed over the apex of the valve superiorly and was lodged between the rim of the valve and the still moveable anterior leaflet preventing full closure. Retrospective evaluation of the TEE by the cardiologists, after examining the autopsy specimen, failed to visualize the thrombus. However, the functional abnormality of the mitral prosthesis suggested that a thrombus might have been present. The inability to visualize the thrombus may have been related to its relatively flat configuration.

Discussion

TEE is an excellent clinical diagnostic tool in the evaluation of cardiovascular lesions, especially mechanical mitral valve prostheses[1] Several studies show that TEE is superior to TTE in the evaluation of patients with suspected mitral prosthetic dysfunction.[2-4] In fact, TEE has clearly demonstrated mitral prosthetic abnormalities in patients where TTE and Doppler imaging gave normal

or inadequate results.[5] TEE is able to define the anatomical lesions more accurately as well, including ring abscesses and vegetations. Identification of mitral regurgitation as well as semiquantitation of the degree of regurgitation are markedly enhanced with this technique.[4] It has been suggested that TEE could potentially reduce the need for cardiac catheterization prior to valve surgery.[5]

Despite the improvement in diagnostic accuracy in evaluating clinically dysfunctional mitral valve prostheses attained with TEE, the imperfections associated with any imaging procedure must be kept in mind. Widespread use of this tool by less experienced operators will likely decrease the sensitivity and specificity of the technique. Two important lessons are learned from our unfortunate case. First, TEE is not fool-proof, and a negative or normal study should not stop further evaluation when clinical suspicion warrants this. Second, autopsy remains an invaluable examination, the gold standard, to provide definitive information on the reliability of new diagnostic modalities.

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epitome

i-′pit-ə-mē\ *n* [L, fr. Gk *epitomē*, fr. *epitemnein* to cut sho
fr. *epi-* + *temnein* to cut — more at TOME] (1520) **1 a** :
summary of a written work **b** : a brief presentation or sta
ment of something **2** : a typical or ideal example: EMBOI
MENT (the British monarchy itself is the ~ of tradition
Richard Joseph) **3** : Plural — *Epit-o-mes* — A regul
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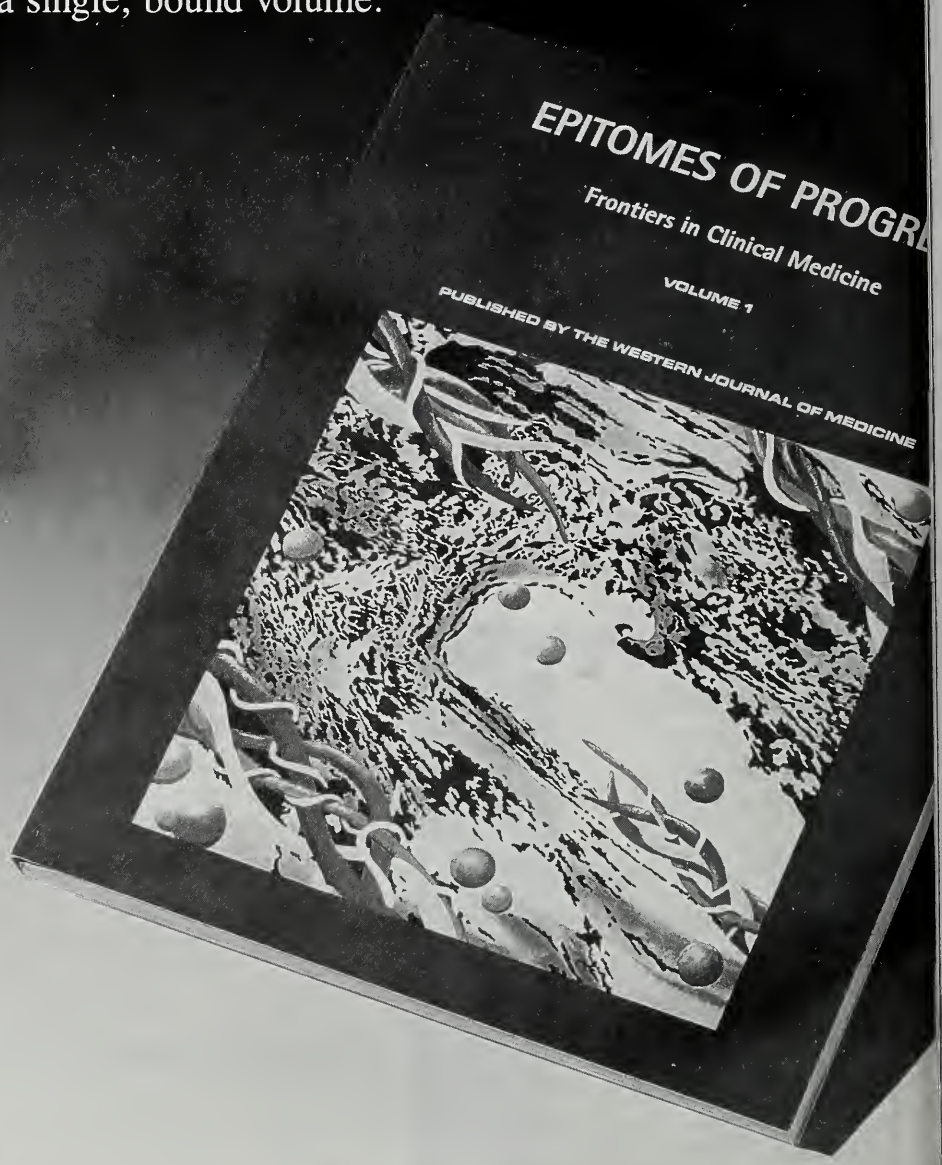

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Important Advances in Clinical Medicine

Neurology

David P. Richman, MD, Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in neurology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Neurology of the California Medical Association, and the summaries were prepared under the direction of David P. Richman, MD, and the panel.

Neurology of Human Immunodeficiency Virus Infection—Past, Present, and Future

TWO years after the acquired immunodeficiency syndrome (AIDS) was described, investigators published the first case series reporting its neurologic complications. Cerebral toxoplasmosis, cryptococcal meningitis, progressive multifocal leukoencephalopathy, and primary central nervous system (CNS) lymphoma emerged as major cerebral manifestations, suggesting the brain was not spared from the atypical infections and rare tumors that characterized systemic AIDS. New neurologic syndromes were recognized, such as subacute encephalitis and vacuolar myelopathy; AIDS was added to the differential diagnosis in patients with aseptic meningitis and painful neuropathy. Then, as now, in nearly half of patients infected with the human immunodeficiency virus (HIV), clinically apparent neurologic illness developed.

Identification of the pathogen, now known as HIV, and the development of serologic testing in the mid-1980s expanded the spectrum of associated neurologic disorders and provided new clues regarding pathogenesis. Evidence of viral antigens and nucleic acids in the brain supported the notion that subacute encephalitis, clinically manifest in mid- to late-stage HIV infection as dementia, might be caused by HIV. Cerebrospinal fluid pleocytosis in patients with early HIV infection, whether asymptomatic or clinically evident as aseptic meningitis, suggested a possible mechanism for the virus to gain access to the brain. The association of acute and chronic inflammatory demyelinating polyneuropathies with early HIV infection argued that a dysimmune state might precede the overt immunosuppression of AIDS. Other neuromuscular complications were recognized, some infectious (cytomegaloviral [CMV] polyradiculitis and mononeuritis multiplex), some possibly immune-mediated (vasculitic mononeuritis multiplex and inflammatory myopathy), and some idiopathic (nemaline rod-body myopathy). In children with AIDS, encephalopathy, either static or progressive, emerged as the most prominent neurologic manifestation, with opportunistic infections and tumors infrequent, myelopathy rare, and neuromuscular disorders either uncommon or unrecognized.

As nucleoside antiretroviral agents came into use in the late 1980s, attention turned to whether these agents would lessen neurologic disease, particularly diseases thought primarily due to HIV. High-dose zidovudine is effective for HIV-associated dementia in adults and for encephalopathy in children, although it remains uncertain whether didanosine, zalcitabine, or stavudine therapy provide similar benefit. In contrast, myelopathy and painful neuropathy do not respond to standard antiretroviral therapy, and in fact, painful neuropathy is a dose-limiting side effect of

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the use of didanosine, zalcitabine, and stavudine. Myopathy complicates zidovudine therapy in as many as 30% of patients taking the drug long term. Histologic features suggest mitochondrial dysfunction, and patients often improve after the drug is withdrawn. Ultrastructural changes in mitochondria, along with in vitro studies and studies of animals, further support the concept of zidovudine as a mitochondrial toxin.

The management of neurologic opportunistic infections has been more successful. Sulfadiazine and pyrimethamine for cerebral toxoplasmosis, amphotericin B and fluconazole for cryptococcal meningitis, and ganciclovir and foscarnet for CMV polyradiculitis have made these diagnoses compatible with long-term survival in patients able to tolerate the maintenance therapy these infections require. For patients with progressive multifocal leukoencephalopathy, the prognosis is in months, which is worrisome because this late-stage reactivation of cerebral JC viral infection might be anticipated to become more common as antiretroviral therapy and improved treatment of infectious complications extends the survival of patients with AIDS. Despite advances in treating primary CNS lymphoma in patients who do not have AIDS, the prognosis remains grim in patients with AIDS, in whom aggressive chemotherapy poses high risks.

The disabling, if not fatal, nature of neurologic disease requires continuing efforts to understand how HIV infection and its treatment affects the nervous system, particularly as HIV infection begins to evolve from an imminently life-threatening illness to a chronic condition. Dramatic changes in health care delivery strain practitioners caring for HIV-infected patients, and tight research funding and unprecedented patient activism put pressure on clinical and basic science HIV investigators. Antiretroviral clinical trials should include the monitoring of neurologic status, both to assess whether new therapies are effective against primarily HIV-related conditions such as dementia and to characterize neurotoxic side effects. When rapid changes in AIDS treatment preclude separate follow-up studies to address efficacy and side effects of neurologic importance, neuroepidemiologic surveillance can confirm clinical trial observations. They can also identify risk factors and trends in neurologic disease, which define research and patient care priorities. Basic HIV research has described the neuropathologic substrate for dementia and suggested that the viral-encoded protein gpl20 may be neurotoxic, providing intriguing clues about the neuropathogenesis of dementia and neuropathy. Continued advances in HIV molecular and cell biologic processes and increased understanding of viruses and immune responses have the best promise for developing effective treatment of the virus's protean neurologic manifestations. Finally, it is worth recalling that both AIDS and its neurologic sequelae were recognized by clinicians who recorded their observations and appreciated their importance. For the foreseeable future, clinicians will have a place beside the clinical trialists, epidemiologists, and basic scientists in the battle against HIV.

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Emerging Therapies for Acute Stroke

IN the past two decades, major advances have occurred in stroke prevention, including risk factor intervention, antithrombotic prophylaxis in atrial fibrillation, antiplatelet therapy, and carotid endarterectomy. Nonetheless, with the aging of the United States population, ischemic stroke is an increasingly common, devastating disorder. Fortunately, we are entering a new era of effective interventions for acute stroke that reflects a remarkable confluence of advances in three areas: the pharmacology of hypoxic neuronal injury and of thrombolysis, the diagnostic neuroimaging of patients with early ischemia, and the clinical pathophysiology of the first few hours of stroke in humans.

Two strategies dominate current pharmacologic investigations in acute stroke treatment: cytoprotection and arterial recanalization. Cytoprotective therapies are the product of fundamental neuroscientific advances in identifying at a manipulable, molecular level mechanisms of neuronal injury in hypoxic environments. When focal occlusions disrupt blood flow to the brain, a cascade of molecular events leading to cell injury follows. The release of excitatory amino acid neurotransmitters, the accumulation of intracellular calcium, the generation of oxygen-free radicals, nitric oxide formation, and the release of cytokines by infiltrating polymorphonuclear leukocytes all mediate cellular injury and afford numerous targets for pharmacologic blockade. The *N*-methyl-d-aspartate excitatory amino acid channel alone possesses at least six sites at which competitive inhibition confers neuroprotection in animal stroke models. A multitude of phase II and phase III clinical trials of excitatory amino acid neurotransmitter antagonists, novel opiate antagonists, voltage-gated calcium channel antagonists, and antileukocyte-adhesion monoclonal antibodies are now under way in this country. These studies will ideally yield

a combination of complementary neuroprotective agents that may be applied shortly after the onset of a stroke, in the field or on arrival in emergency departments, to preserve cell integrity until measures restoring blood flow can be implemented.

Chief among the concerns hampering the development of arterial recanalization of the cerebral circulation through thrombolysis and angioplasty has been that, unlike the heart, the brain bleeds. Will symptomatic hemorrhages into an infarct bed outnumber the rewarding cases of swift and dramatic neurologic recovery that all centers employing thrombolysis have observed when therapy is initiated within hours after the onset of stroke? Increasing worldwide experience with thrombolytic agents suggests that thrombolysis has the potential to be a double-edged sword, but with net benefits. A just-completed large European trial using tissue plasminogen activator administered intravenously within six hours of an ischemic stroke found a statistically significant benefit of therapy on functional outcome in target patients, with a lesser, countervailing trend of an increased incidence of hemorrhage among patients with subtle computed tomographic (CT) abnormalities not recognized by enrolling centers. The emerging clinical literature suggests that intracranial thrombolysis can reduce infarct size and can enhance neurologic outcome if it is carefully and rapidly delivered. Intra-arterial therapy administered by superselective catheterization of the occluded intracranial artery may allow higher recanalization rates and decreased bleeding complications than intravenous therapy and is the subject of a new multicenter trial with several participating western centers.

Patient selection for neuroprotective and thrombolytic therapies has been limited by the inability of standard CT or magnetic resonance (MR) studies to visualize ischemic changes in the first four hours after onset. Clinical localization, imperfect and highly dependent on experience, currently guides initial therapeutic decisions. Several new MR techniques, however, promise to increase the capacity to define early changes. Diffusion-weighted imaging measuring translational movements of water detects and localizes ischemic fields within 30 minutes of onset. Perfusion imaging with ultrafast tracking of the passage of a bolus of contrast provides an immediate quantitative assessment of cerebral tissue blood flow and volume. Magnetic resonance spectroscopy allows the tracking of metabolites within neurons that distinguishes normal cells, infarcted cells, and ailing but still viable penumbral cells. At selected centers developing new echo planar hardware, concurrent standard MR imaging, MR angiography, diffusion MR, and perfusion MR imaging can be done in patients with acute stroke in only 12 minutes. The result is a comprehensive pathophysiologic picture of brain anatomy, vessel stenoses, tissue ischemia, and tissue perfusion available in the acute stage to guide therapeutic decision making.

Mobilization of the clinical care system for patients with acute stroke is necessary for emerging therapies to be applied. The few studies in animals and humans that have examined the duration of focal ischemia required to produce irreversible neuronal damage suggest that the therapeutic window for brain resuscitation is brief, between one and six hours after onset. In the past, however, the identification, triage, and treatment of patients with ischemic stroke have rarely been rapid, and most patients had therapy initiated after this window had closed. Clinical centers participating in trials of cytoprotective and thrombolytic therapies have shown that intensive education of the public and referring physicians, the development of dedicated stroke teams and units, and the institution of code stroke protocols may dramatically reduce delays to patient presentation, emergency evaluation, and the initiation of treatment. The optimal delivery of current therapies and continued progress in developing promising new therapies depend on galvanizing the medical system to approach stroke like trauma, as a treatable, rapidly evolving neuroemergency.

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Development of Botulinum Toxin Therapy

OVER the past ten years, the use of botulinum toxin has become well established as safe and effective for the treatment of the involuntary muscle contractions of dystonia and also for the disorder known as hemifacial spasm. Indeed, botulinum toxin injections have become regarded by many practitioners as first-line therapy for hemifacial spasm and focal dystonias such as involuntary, forceful eye closure (blepharospasm); spasms of the vocal cords (spasmodic dysphonia); and involuntary turning or posturing of the head and neck (torticollis). The toxin is also used routinely for focal action dystonia such as

writer's cramp and oromandibular dystonia such as involuntary jaw closure. There is also continued use of botulinum toxin in its first clinical application, the nonsurgical treatment of strabismus.

Botulinum toxin works its clinical effect after intramuscular or subcutaneous administration by binding to the nerve endings within muscle tissue and ceasing the nerve's release of acetylcholine to the muscle receptors, resulting in reduced muscle contractions. This effect gradually wears off after a period of typically three to five months as the nerve ending sprouts new connections to reinnervate the muscle. Eventually the nerve-to-muscle connections are sufficiently reestablished to again produce unwanted muscle contractions, and readministration of the toxin is necessary.

Botulinum toxin can be identified by serologic assay as to various subtypes A through G. Type A is the toxin currently available for clinical use. The production of antibodies directed against botulinum type A has been identified in a small percentage of patients receiving the agent and may be related to dosage and the frequency of administration. This antibody production is suspected to be a reason that some patients who initially show improvement with the toxin have a lesser or absent benefit with later administrations. Alternative botulinum serotypes, specifically types B and F, have been examined for use in patients who have had an initial poor response. Reports on the use of type F toxin to treat torticollis indicate that, although of benefit, it has a much shorter clinical duration of about a month.

Side effects of the drug, if they occur, usually are attributable to excessive weakening of the muscle in which the drug is adrninistered, and this is transient as the effects of the toxin wear off. The toxin does appear to have some hematogenous spread. Sensitive measurements of the neuromuscular junction in muscles distant from the administration site have shown that there is a remote although subclinical effect of the toxin. There have been no reports of clinical botulism occurring after the intentional administration of the toxin.

Botulinum toxin has provided a means to treat numerous conditions that have been poorly responsive to medical therapy, or an adequate response often meant the patient had to endure unpleasant side effects of the medicines or surgical treatment. The use of the toxin requires knowledge of its pharmacology and clinical expertise in the movement disorder and muscle anatomy and other conditions for which the toxin has been shown to be beneficial.

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Multiple Sclerosis

MULTIPLE sclerosis is an inflammatory disease of the central nervous system (CNS) of unknown cause. It is a cause of substantial morbidity, affecting about 250,000 young adults in the United States. Epidemiologic studies strongly suggest that the disease is related to an environmental agent, possibly viral, in persons who have a genetic susceptibility due to their major histocompatibility (MHC) molecules. It has been suggested that the putative agent's ability to trigger an autoimmune response in this context is related to acquisition of the agent at a later age in areas that carry a high incidence. The disease is characterized by recurrent episodes of perivenular inflammatory lesions affecting predominantly white matter and resulting in demyelination. The episodes of demyelination are often, though not necessarily, associated with clinical exacerbations of disease.

The natural course of the disease is unpredictable in individual patients, and relapses are often followed by partial or complete clinical remission, resulting in a relapsing-remitting pattern. With recurrent episodes, however, neurologic dysfunction may become irreversible and even progressive. This form of the disease is characterized by a growing number of demyelinating lesions, known collectively as the burden of disease, an increased likelihood of spinal cord involvement, and pathologically with oligodendroglial cell and neuronal cell loss, associated with a lack of remyelination and gliosis.

Until recently, no form of therapy in multiple sclerosis was known to affect the natural history of the disease. Three advances have led to new, promising opportunities for intervention. First, the abnormalities in the immune system, both systemically and in the CNS in patients with multiple sclerosis and parallel abnormalities in experimental animal models have been identified, and they show an overactivity of a subset of $CD4^+$ T-helper cells known as Thl cells. These activated T cells, present systemically in patients with multiple sclerosis, secrete interferon gamma (IFN-γ). Their activation is dependent on cytokine interleukin (IL)-12 secreted by macrophages and inhibited by cytokines IL-10 and IL-4. Activated T cells pass into the CNS through the blood-brain barrier with appar-

ent ease. Their persistence in the CNS may depend on a subpopulation of these T cells with specificity for CNS antigens, most notably to peptide components of myelin. The pathogenesis of the inflammatory lesions or plaques depends on the activation of macrophages by IFN-γ leading to phagocytosis and the secretion of cytokines, most notably tumor necrosis factor α, that are toxic to myelin. The adrninistration of IFN-γ and increased secretion of endogenous IFN-γ, such as by intercurrent infections, result in exacerbations of the disorder.

A second important advance, brain magnetic resonance (MR) imaging, has proved to be a sensitive detector of demyelinating lesions, and moreover, the concomitant administration of gadolinium allows the detection of the breakdown of the blood-brain barrier as a consequence of active perivenular inflammation. This imaging has substantially influenced the diagnosis of the disease. Equally important, it allows disease activity to be followed in an individual patient.

A third important advance has been the establishment of the double-blinded, placebo-controlled, multicentered clinical drug study as the standard to test effficacies of new medications. This approach has proved important in multiple sclerosis, where the natural history of the disease is variable. The application of these three sets of advances has led to the testing of interferon beta (IFN-β) in patients with relapsing-remitting disease and to the identification of a substantial reduction in the relapse rate and new demyelinating lesions on MR. The mechanism of action of IFN-β appears likely to be related to its in vitro effect in blocking the stimulation of MHC molecules by IFN-γ. Interferon beta has proved fairly safe. The continued occurrence of inflammatory lesions, however, seems to be the basis of a continued progression of disease, albeit at an apparently lower rate.

Other immunosuppressive and immunomodulating agents presently under study may provide synergistic effects by interacting with different facets of Thl and macrophage activation and function. The effective management of patients with multiple sclerosis is consequently likely to involve the use of combinations of drugs that are able to convey efficacy and relative specificity.

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Dementia—An Update

THE public health importance of Alzheimer's disease has led to an intensive effort to understand its causes and pathophysiology that is now beginning to yield important results. Most autopsy series of dementia show that Alzheimer's disease is by far the most common cause of dementia in adults, and most older adults who have a slowly progressive decline in cognition that progresses to an overt dementia usually suffer from Alzheimer's disease. Thus, the efforts aimed at improving our understanding of the clinicopathologic correlations, genetics, diagnosis, and treatment of this disease have profound consequences for patient care.

Although there is some controversy about how to diagnose Alzheimer's disease during life, clinicopathologic series generally indicate a substantial validity of the clinical diagnosis, usually between 85% and 100% in centers using research criteria for diagnosis. The accuracy of the diagnosis of other common causes of dementia, notably dementia due to multiple cerebral infarctions (multi-infarct dementia or ischemic vascular dementia) has generally been considerably lower. The lack of clear criteria for the clinical diagnosis of vascular causes of dementia is likely one reason for this problem, and this has recently been addressed with the proposal of several still unvalidated schemes for diagnosing and classifying this disorder. Another area of possible importance is the recognition of the overlap, both clinically and pathologically, between Alzheimer's and Parkinson's disease. Many demented patients are found at autopsy to display Lewy bodies in the substantia nigra and cerebral cortex. Often these findings are seen in conjunction with neuritic plaques and neurofibrillary tangles sufficient to diagnose Alzheimer's disease as well. These cases may be called Lewy body dementia, the Lewy body variant of Alzheimer's, or Parkinson's disease with Alzheimer's disease, depending on many factors. These include the clinical presentation, relative degree and location of Alzheimer's and parkinsonian pathologic processes, and the specific neuropathology laboratory involved. Although there is currently no consensus about the terminology and relevance of these findings, there is general agreement that these cases are commonly seen and probably underdiagnosed.

Another important area of research has been the genetics of Alzheimer's disease. It has long been known that in patients with the Down syndrome living to the third decade, the neuropathology of Alzheimer's develops. This information has focused considerable attention on chromosome 21 as a possible etiologic factor. Chromosome 21 has also been known to contain the gene for the amyloid precursor protein *(APP)*, the larger protein that is processed to yield β-amyloid, the key constituent of the

neuritic plaque. In 1991 an autosomal dominant form of early-onset Alzheimer's disease was linked to mutations in this *APP* gene on chromosome 21, for the first time providing definitive evidence of a genetic cause of Alzheimer's disease, although families with this form of the disease account for a small proportion of all cases of Alzheimer's. Another group of families with early-onset autosomal dominant Alzheimer's disease has been genetically linked by mapping studies to chromosome 14. The identity of this gene has recently also been determined, offering the promise of defining the mechanism of this type of Alzheimer's. Finally, a third Alzheimer's gene has been suspected to reside on chromosome 19, based on population studies in cases of older-onset disease. It now appears that the gene involved is the gene for apolipoprotein E *(APOE),* a protein known for many years to be involved in cholesterol transport. Of the three isoforms, 2, 3, and 4, the last allele, $\epsilon 4$, is associated with an increased risk of Alzheimer's disease. This genetic marker, however, is more properly considered a risk factor for Alzheimer's than a causal gene because in many persons homozygous or heterozygous for the $\epsilon 4$ allele, Alzheimer's disease does not develop.

This genetic information has a number of important consequences for our understanding of Alzheimer's disease. First, it is apparent that the disease is genetically heterogeneous. There are likely to be other genetic causes still undetected, and many cases may not be genetically determined at all. Second, although the appearance of genetic markers offers new possibilities for diagnosis, this use of genetics has considerable problems. Because of the heterogeneous nature of Alzheimer's, the absence of a single genetic marker in a patient cannot be taken as strong evidence against the disease, and the use of *APOE* gene testing as a diagnostic tool is unsatisfactory because it is not invariably associated with the disease. Most important, genetic testing for an incurable disease late in life is of questionable utility. At this point, genetic information is much more important in identifying the cause and mechanisms of sporadic Alzheimer's disease. For this reason, the gene products determined by the Alzheimer's-associated genes are being intensively investigated with respect to their roles in the formation of the amyloid plaque and neurofibrillary tangles characteristic of this disease.

The treatment of Alzheimer's disease has now progressed to the point where specific pharmacotherapy is available. Tacrine, a cholinesterase inhibitor, has been approved for the treatment of Alzheimer's as a result of several placebo-controlled studies. This drug treatment is based on the well-established finding of severe neurodegeneration in the basal forebrain cholinergic system of patients with Alzheimer's disease, with a corresponding diminution of brain acetylcholine. Although the drug provides symptomatic improvement in some patients, enthusiasm for its use has been tempered by the frequent appearance of liver function abnormalities—requiring regular monitoring of serum aminotransferase levels—four-times-a-day dosage, and the transient nature of improvement. Nevertheless, patients able to tolerate the drug at high doses have shown substantial, albeit transient, improvement in cognitive tests. The scientific advances in understanding the pathophysiology of Alzheimer's disease should eventually permit the development of drugs that directly target the relevant pathologic processes in this disease and halt or prevent the development of symptoms.

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Headache

RECENTLY there has been a notable resurgence in research activity to clarify the fundamental mechanisms of migraine headache. Most of these studies have dealt with the role of serotonin (5-hydroxytryptamine [5-HT]) receptors. Several subgroups of the receptor sites have been identified. The 5-HTID and 5-HTIB receptors appear to be the most important sites in the pathogenesis of migraine. Another study measuring cerebral blood flow using positron emission tomographic scanning has revealed a progressive reduction in the blood flow originating from the occipital region and spreading anteriorly during the headache, which resembles Leão's spreading depression. These two observations challenge the time-honored concept of the vascular theory of migraine; at the same time, investigators have also demonstrated that antimigraine drugs that act at serotonin-receptor sites also prevent the neurogenic inflammation of blood vessels mediated by substance P-containing nerve fibers in the trigeminal vascular system.

The recent introduction of sumatriptan succinate represents the most important advance in the treatment of migraine headache in several decades. This drug was designed specifically to be active at serotonin-receptor sites and acts as a selective agonist at 5-HTID receptors, causing vasoconstriction of cephalic vessels. The drug

also acts at the presynaptic 5-HT1-like receptors of the sensory nerve endings to block "neurogenic inflammation." This observation has led to a reevaluation of the other commonly used drugs like ergotamine tartrate and dihydroergotamine mesylate. These drugs have now been shown to be active at the same receptor sites.

Sumatriptan is effective in controlling an acute migraine headache—and cluster headache, even though it has not been approved by the Food and Drug Administration for this indication—in more than 75% of patients. The response is so specific that some headache specialists think that the diagnosis should be reevaluated if the drug is not effective. A definite advantage over the conventional medications is that it is effective at any stage of the headache, but there is a high recurrence rate (almost 40%), probably related to the short half-life. Most patients experience cephalic symptoms of burning and tingling, and at least a third of patients complain of tightness of the throat. This last symptom is thought to be caused by spasm of the pharyngeal and esophageal muscles. These effects are short-lived. Uncontrolled hypertension, coronary artery disease, and basilar and hemiplegic migraine are contraindications for the use of this drug. A few deaths have been reported. These were from cardiac causes and mostly were in patients in whom the underlying cardiac disorders were unrecognized.

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New Antiepileptic Medications

SINCE August 1993, three new antiepileptic medications have become available: felbamate, gabapentin, and lamotrigine. Together they represent a new generation of medications, characterized by less neurotoxicity and poorly understood mechanisms of action compared with older antiepileptic drugs. Although their indications are similar, their unique pharmacokinetic and toxicity profiles are likely to dictate preferences.

Gabapentin is indicated for the adjunctive treatment of partial seizures with or without secondary generalization. Pharmacologically, it embodies many properties of an ideal anticonvulsant. It is not bound to protein, not metabolized, is without drug-drug interactions, and has a high therapeutic index. For these reasons, gabapentin is ideal for use in elders and in polytherapy. Three-times-per-day dosing is necessary, however, because of a half-life of five to seven hours. Somnolence, dizziness, and ataxia are common side effects, but gabapentin can be rapidly titrated with good tolerance. Postmarketing clinical experience suggests that the maximum recommended dosage of 1,800 mg per day may be subtherapeutic and that dosages upwards of 3,600 mg per day to 4,800 mg per day may result in better seizure control.

Lamotrigine has been approved by the Food and Drug Administration for the adjunctive treatment of partial seizures in patients aged 16 years and older. Experience from its extensive use in Europe suggests, however, that it may have a broad spectrum of antiepileptic activity, similar to valproic acid, in the treatment of generalized seizure disorders and the Lennox-Gastaut syndrome. Lamotrigine can be involved in drug-drug interactions because of its hepatic metabolism. Enzyme-inducing antiepileptic medications, such as phenytoin, carbamazepine, and barbiturates, will halve its natural half-life of 25 hours, and valproic acid will almost triple it. Because of the nausea associated with higher doses, twice-a-day dosing is recommended. Its side effects include diplopia, drowsiness, and ataxia. Rash, rarely leading to the Stevens-Johnson syndrome, is a possible risk but may be minimized by avoiding the concomitant use of valproic acid and "starting low and going slow" in escalating the dose.

Felbamate is indicated for use as monotherapy or adjunctive therapy in patients with partial seizures with or without secondary generalization and as adjunctive therapy in patients with the Lennox-Gastaut syndrome. Its use has been complicated by drug-drug interactions and idiosyncratic reactions, namely aplastic anemia and hepatotoxicity, sometimes with fatal consequences. The risk of aplastic anemia, presently estimated at one in 3,500, is alarming when compared with the one in 40,000 to one in 100,000 risk of aplastic anemia associated with the use of chloramphenicol. The manufacturer's recommendations that blood cell counts and liver enzyme levels be measured weekly or biweekly and that consent forms printed on package inserts be signed by patients taking felbamate further restrict its use to patients whose seizures are refractory to other medications. The lesson set forth by felbamate is that any antiepileptic medication has the potential for idiosyncratic reactions.

The role of new antiepileptic medications in the face of more established drugs will surely evolve as more experience is gained in their use. At present, however, they are most likely to be beneficial as adjunctive therapy for partial seizure disorders and the Lennox-Gastaut syndrome, when indicated.

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Suicide Among Older Persons—United States, 1980-1992

AGE-specific rates of suicide in the United States consistently have been highest among older persons. However, the overall suicide rate for persons aged ≥65 years had been declining from the 1940s (the first full decade when the entire continental United States entered the death registration area) until the 1980s,[1] before increasing during 1980-1992. In 1992, persons aged ≥65 years accounted for 13% of the population but almost one fifth of all suicides. From 1980 through 1992, overall suicide rates increased for persons in only two age groups: 5-19 years and ≥65 years.[2] This report summarizes trends in suicide among persons aged ≥65 years from 1980 through 1992 (the most recent year for which final data are available) and indicates that the risk for suicide among older persons has started to steadily increase after years of decline.

Suicides among older persons were identified using CDC's underlying cause mortality files for each year.[3] Suicide deaths and methods of fatal injury were classified using the International Classification of Diseases, Ninth Revision, on death certificates by the attending physician, medical examiner, or coroner. Suicide rates were calculated using population data from the 1980 and 1990 census enumerations and intercensal and postcensal year estimates compiled by the U.S. Bureau of the Census.

During 1980-1992, of the 384,262 suicides in the United States, 74,675 (19%) occurred among persons aged ≥65 years. From 1980 to 1992, the number of suicides among persons in this age group increased 36%, from 4,537 to 6,160; in comparison, rates for this group increased 9%, from 17.6 to 19.1 per 100,000 population aged ≥65 years. Suicide rates decreased for persons aged 65-69 years and 70-74 years but increased substantially in older groups (75-79 years [11%], 80-84 years [35%], and ≥85 years [15%]). Men accounted for 81% of suicides among persons aged ≥65 years; the rate for men increased 10%, from 34.8 to 38.4. For women, the rate decreased 0.7%, from 6.04 to 6.00 (Table 1).

From 1980 to 1992, the largest relative increases in suicide rates occurred in the 80-84-year age group (35%, from 18.2 to 24.6) and in men (10%, from 34.8 to 38.4) (Table 1). For both men and women, the highest increase occurred among persons aged 80-84 years: the rate for men increased 35% (from 43.5 to 58.6), and the rate for women increased 36% (from 4.7 to 6.4). In addition, the highest suicide rate (24.6) occurred in 1992 among persons aged 80-84 years.

Firearms were the most common method of suicide used by both men (74%) and women (31%) aged ≥65 years (Fig. 1). During 1980-1992, firearm-related suicides increased from 60% to 69%, and the firearm-related suicide rate increased by 24%, from 10.6 to 13.1. Among men, the percentage of suicides completed with a firearm increased from 69% to 77%; among women, the percentage increased from 24% to 35%.

For persons aged ≥65 years, sex- and marital status-specific suicide rates were highest for divorced/widowed men. During 1980-1992, the suicide rate for married persons aged ≥65 years increased 4% (from 17.3 to 18.0); rates increased 3% for never-married persons (from 24.8 to 25.5) and 9% for divorced/widowed persons (from 20.5 to 22.4). In 1992, the rate for divorced/widowed men aged ≥65 years (76.4) was 2.7 times that for married men, 1.4 times that for never-married men, and >17 times that for married women. In addition, the rate for divorced/widowed women (8.0) was 1.8 times that for married women and 1.4 times that for never-married women.

Reported by: Division of Violence Prevention, National Center for Injury Prevention and Control, CDC.

Editorial Note: In 1992, suicide was the third leading cause of injury-related deaths among older U.S. residents, following deaths from unintentional falls and unintentional motor-vehicle crashes (CDC, unpublished data, 1992). The findings in this report document an increase in suicide among older persons following decades of decline and indicate that a substantial proportion of this increase was associated with an increase in firearm-related suicide. Because older persons constitute the fastest growing age

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Table 1.—Rate* of suicide for persons aged ≥65 years and percentage change from 1980 to 1992, by age group and sex—United States

Age group (years)	Men			Women			Total		
	1980	1992	% Change	1980	1992	% Change	1980	1992	% Change
65-69	28.0	27.4	–2.1	6.6	6.0	–9.1	16.1	15.6	–3.1
70-74	33.3	33.0	–0.9	6.4	5.8	–9.4	17.7	17.5	–1.1
75-79	41.1	45.2	+10.0	5.9	6.1	+3.4	19.5	21.6	+10.8
80-84	43.5	58.6	+34.7	4.7	6.4	+36.2	18.2	24.6	+35.2
≥85	50.1	62.6	+25.0	5.4	6.0	+11.1	19.0	21.9	+15.3
Total	**34.8**	**38.4**	**+10.3**	**6.0**	**6.0**	**–0.7**	**17.6**	**19.1**	**+ 8.5**

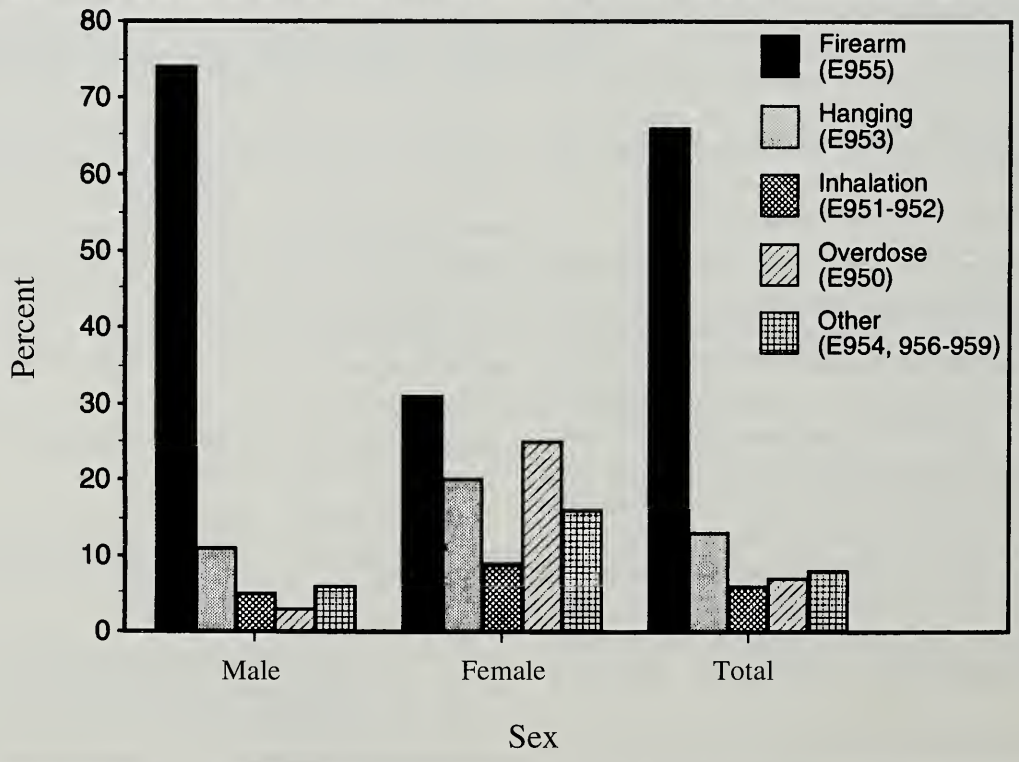
*Per 100,000 population, rounded to tenths.

group in the United States,[4] the number of suicides in this age group probably will continue to increase. In addition, recent studies of cohorts indicate that suicide rates have, in general, been greater among younger adults than among their grandparents at a similar age.[5] As these younger adults age, their suicide rates may increase above those of currently older U.S. residents.[5] In some birth cohorts, suicide rates may be higher because of the relative size of the group: larger cohorts may be subject to increased "stressors" from increased competition for resources and a disparity between expectations and the means to satisfy those expectations.[5]

Risk factors for suicide among older persons differ from those among younger persons and include a higher prevalence of alcohol abuse and depression, greater use of highly lethal methods, and social isolation.[6] In addition, older persons make fewer attempts per completed suicide, have a higher male-to-female ratio than other age groups, have often visited a health-care provider shortly before their suicide, and have more physical illnesses and affective disorders.[7]

The findings in this report underscore the need for suicide-prevention activities directed at older persons—particularly because suicide rates among older persons are

Figure 1.—Percentage of suicides among persons aged ≥65 years, by sex and method*—United States, 1980-1992.



*Identified through *International Classification of Diseases, Ninth Revision,* codes on death certificates.

higher than among other age groups, and because health professionals and others have not fully recognized suicide as a preventable health problem among older persons.[8] In particular, one of the national health objectives for the year 2000 is to reduce the suicide rate for white men aged ≥65 years by 15% (objective 7.2c).[9] Strategies for reducing suicide rates among older persons include senior peer counseling programs; efforts that target high-risk persons; improving mental health services through suicide-prevention centers; and programs that increase awareness of risk factors among those who have frequent contact with seniors.[8]

A free copy of "Suicide in the United States, 1980-1992" can be obtained from CDC Suicide Surveillance, 4770 Buford Highway, N.E., Mailstop K-60, Atlanta, GA 30341-3724.

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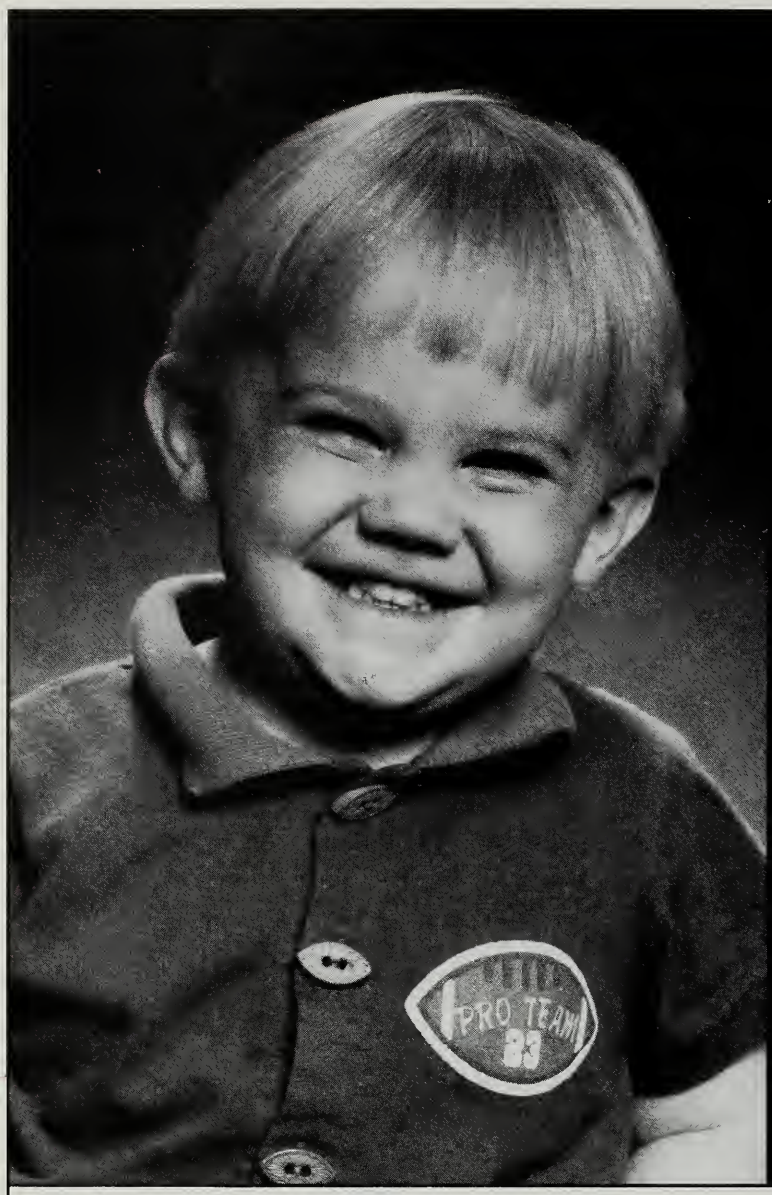

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Drugs for AIDS and Associated Infections

RESULTS of recently completed clinical trials have led to some changes in recommendations for treatment of human immunodeficiency virus (HIV) and other infections associated with AIDS.

HIV INFECTION—None of the drugs currently available to treat HIV-infected patients can eradicate the infection, but they can decrease the viral load and delay immunologic decline. Concurrent use of two or more drugs may prove to be more effective than monotherapy.

Zidovudine—Zidovudine (AZT; *Retrovir),* a nucleoside analog that inhibits HIV reverse transcriptase, can transiently decrease plasma levels of HIV RNA and increase circulating CD4 T-cells, decrease the number of opportunistic infections and prolong survival in patients with HIV disease. The effectiveness of prophylaxis with zidovudine after accidental injection of virus is unproven; several failures have been reported. Zidovudine given to pregnant HIV-infected women reduced transmission of the virus to their offspring by two-thirds, from 28% of infants infected to 8% (Connor EM, et al, *N Engl J Med* 1994; 331:1173). When started during the acute retroviral syndrome of primary HIV infection, zidovudine improved the subsequent clinical course and increased the CD4 cell count (Kinloch-de Loes S, et al, *N Engl J Med* 333:408, Aug 17, 1995). In asymptomatic HIV-infected patients with 500 or more CD4 cells per mm^3, early treatment with zidovudine did not slow progression to AIDS or prolong survival compared to giving zidovudine after the CD4 count fell to less than 500 (Volberding PA, et al, *N Engl J Med* 333:401, Aug 17, 1995). One unpublished trial in HIV-infected patients with 200 to 500 CD4 cells per mm^3 found giving zidovudine with ddl or ddC, or giving ddl alone, more effective than zidovudine alone in slowing progression to AIDS and prolonging survival (ACTG 175, *ICAAC News* Sept 19, 1995, p 1).

Adverse effects of zidovudine include anemia, neutropenia, nausea, vomiting, headache, fatigue, confusion, malaise, myopathy and hepatitis. Taken after the first trimester of pregnancy, zidovudine is generally well tolerated and has not been associated with malformations of the fetus. With continued use of zidovudine monotherapy, increasing levels of *in vitro* resistance slowly develop and have been associated with clinical deterioration (Japour AJ, et al, *J Infect Dis* 1995; 171:1172; D'Aquila RT, et al, *Ann Intern Med* 1995; 122:401).

ddl—Strains of HIV resistant *in vitro* to zidovudine may be susceptible to ddl (dideoxyinosine; didanosine; *Videx),* another reverse-transcriptase inhibitor, and, after treatment with ddl, may become susceptible once again to zidovudine. ddl has been used for patients unresponsive to or intolerant of zidovudine, for monotherapy instead of zidovudine, and for combined therapy with zidovudine. Use of ddl can transiently decrease viral activity, increase CD4 cell counts and delay progression of the disease. Sequential use of zidovudine and ddl rather than continuing zidovudine alone may delay clinical deterioration (Kahn JO, et al, *N Engl J Med* 1992; 327:581; Spruance SL, et al, *Ann Intern Med* 1994; 120:360), but resistance to ddl may also occur. Major treatment-limiting toxicities of ddl have been painful peripheral neuropathy, acute pancreatitis and gastrointestinal disturbances (Schindzielorz A, et al, *Clin Infect Dis* 1994; 19:1076). Retinal depigmentation can occur, particularly in children. ddl decreases gastrointestinal absorption of itraconazole, ketoconazole and possibly dapsone.

ddC—ddC (dideoxycytidine; zalcitabine; *Hivid),* a third inhibitor of HIV reverse transcriptase, given concurrently with zidovudine may be more effective than zidovudine alone in patients with advanced HIV infection and more than 150 CD4 cells per mm^3 (Fischl MA, et al, *Ann Intern Med* 1995; 122:24). Among patients with advanced HIV disease who have failed or become intolerant to zidovudine, ddC monotherapy appears to be at least as effective as ddl in delaying progression of disease and death (Abrams DI, et al, *N Engl J Med* 1994; 330:657). Used as initial monotherapy for AIDS, ddC has been less effective than zidovudine (Bozzette SA, et al, *JAMA* 1995; 273:295). Peripheral neuropathy can limit dosage. Other adverse effects include rash, stomatitis, esophageal ulceration, pancreatitis and fever.

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Stavudine (d4T)—Another antiretroviral nucleoside analog, stavudine *(Zerit) is* active against most zidovudine-resistant strains. It has been effective for patients with advanced HIV infection who are intolerant to or have failed therapy with zidovudine (Skowron G, *J Infect Dis* 1995; 171 suppl 2:S113). The major dose-limiting toxicity has been painful peripheral neuropathy, which may respond to dosage reduction.

Lamivudine (3TC)—An experimental nucleoside-analog inhibitor of HIV reverse transcriptase, lamivudine is available from Glaxo-Wellcome (1-800-248-9757) for patients who have failed or are intolerant to approved drugs. Concurrent use of zidovudine and lamivudine suppresses HIV resistance to zidovudine, decreases viral load, and increases and maintains CD4 cell counts (Larder BA, et al, *Science* 269:696, 4 August 1995). Studies of lamivudine alone have shown only transient increases in CD4 cell counts and decreases in viral load, with rapid development of resistance (Schuurman R, et al, *J Infect Dis* 171:1411, June 1995). Lamivudine has generally been well tolerated, but data are limited (van Leeuwen R, et al, *J Infect Dis* 171:1166, May 1995).

Protease Inhibitors—A potent new class of drugs that inhibit HIV protease activity and prevent HIV replication *in vitro,* protease inhibitors are active against viral strains resistant to reverse transcriptase inhibitors (Vacca JP, et al, *Proc Natl Acad Sci* 1994; 91:4096). Two protease inhibitors, indinavir *(Crixivan*—Merck, 1-800-497-8383) and saquinavir *(Invirase* Roche, 1-800-332-2144), are available in limited quantities in expanded access programs. Saquinavir plus zidovudine increased and sustained CD4 cell counts more than either drug alone (Vella S, *AIDS* 1994; 8 suppl 3:S25). Indinavir alone or with zidovudine was more effective and had a more sustained effect than zidovudine alone in lowering serum HIV RNA levels and increasing CD4 counts (Massari F, et al, *Abstracts of the 35th ICAAC,* 1995, LB-6). Triple therapy with a protease inhibitor and two nucleoside analogs may be more effective than treatment with two drugs (Pollard RB, *Pharmacotherapy* 1994; 14 [no. 6, part 21:21S). Resistance to the new agents can develop (Condra JH, et al, *Nature* 374:569, Apr 6, 1995). Early studies have not found severe toxicity but, according to Medical Letter consultants, nephrolithiasis has occurred with indinavir.

***PNEUMOCYSTIS CARINII*—Trimethoprim-sulfamethoxazole**—Oral or intravenous (IV) trimethoprim-sulfamethoxazole *(Bactrim,* and others) is the treatment of choice for *P. carinii* pneumonia (PCP) and extrapulmonary *P. carinii* infections. Oral trimethoprim-sulfamethoxazole is the prophylactic agent of choice; it can prevent PCP in most patients who take the drug. However, adverse effects of trimethoprim-sulfamethoxazole, particularly rash, nausea and fever, are frequent in HIV-infected patients. Some episodes of toxicity respond to dosage reduction; others require discontinuation of the drug, but some of the patients who have to discontinue the drug may tolerate it subsequently, with or without desensitization (Jung AC, Paauw DS, *Arch Intern Med* 1994; 4:2402; Gluckstein D, Ruskin J, *Clin Infect Dis* 20:849, April 1995).

Pentamidine isethionate—Parenteral pentamidine *(Pentam 300) is* an alternative treatment for *P. carinii* infections. After symptoms improve with IV pentamidine, most patients can successfully complete treatment with an oral regimen. Adverse effects include hypo- and hyperglycemia, renal failure, leukopenia, long QT intervals and cardiac arrhythmias, pancreatitis and prolonged orthostatic hypotension. Sterile abscesses have occurred with intramuscular use, and hypotension with rapid IV injection. For PCP prophylaxis, aerosolized pentamidine *(NebuPent) is* generally well tolerated, but is less effective than trimethoprim-sulfamethoxazole and, in patients with <100 CD4 cells, less effective than dapsone (Bozzette SA, et al, *N Engl J Med* 1995; 332:6935).

Trimetrexate—The antifolate agent trimetrexate *(Neutrexin)* has been approved for parenteral treatment of moderate to severe PCP. It is not as effective as trimethoprim-sulfamethoxazole (Sattler FR, et al, *Infect Dis* 1994; 170:165), but given with folinic acid *(Leucovorin)* to prevent bone-marrow suppression, it is well tolerated.

Dapsone—The antileprosy sulfone dapsone given concurrently with oral trimethoprim *(Trimpex,* and others) has been successful in treatment of mild to moderate PCP (Medina I, et al, *N Engl J Med* 1990; 323:776). Adverse effects include rash, nausea and, especially in patients with G-6-PD deficiency, methemoglobinemia and hemolytic anemia. Dapsone alone and with pyrimethamine *(Daraprim)* has also been used as an alternative to trimethoprim-sulfamethoxazole for PCP prophylaxis (Podzamczer D, et al, *Ann Intern Med* 1995; 122:755).

Atovaquone—For treatment of mild to moderate PCP, atovaquone *(Mepron)* has been less effective than trimethoprim-sulfamethoxazole, but better tolerated (*Medical Letter* 1993; 35:28; Hughes W, et al, *N Engl J Med* 1993; 328:1521). Adverse effects include rash, gastrointestinal disturbances and hepatitis. Absorption of atovaquone tablets has been a problem, particularly in patients with diarrhea; a new suspension is now available.

Clindamycin and Primaquine—Concurrent use of IV or oral clindamycin *(Cleocin,* and others) with oral primaquine has been successful in patients with mild to moderate PCP (Toma E, et al, *Clin Infect Dis* 1993; 17:178). Adverse effects of this combination have in-

cluded rash, leukopenia, nausea and diarrhea. Primaquine can cause methemoglobinemia and hemolytic anemia, especially in patients with G-6-PD deficiency.

Prednisone—In PCP accompanied by moderate or severe hypoxia, adding prednisone at the start of treatment has decreased the incidence of respiratory deterioration and death (Gagnon S, et al, *N Engl J Med* 1990; 323:1444). Prednisone may also improve tolerance for high-dose trimethoprim-sulfamethoxazole (Caumes E, et al, *Clin Infect Dis* 1994; 18:319). Oral candidiasis and reactivation of herpes simplex infections can occur.

TOXOPLASMOSIS—Pyrimethamine and sulfadiazine—The antifolate agent pyrimethamine given with sulfadiazine is the treatment of choice for central-nervous-system (CNS) toxoplasmosis. Folinic acid is given concurrently to attenuate bone marrow suppression caused by pyrimethamine (Chute JP, et al, *Ann Intern Med* 122:884, June 1, 1995).

Alternatives—Clindamycin with pyrimethamine is an effective alternative for treatment of cerebral toxoplasmosis (Dannemann B, et al, *Ann Intern Med* 1992; 116:33). Atovaquone has been well tolerated and effective in some patients (Kovacs JA, et al, *Lancet* 1992; 340:637).

Chronic Suppression—Pyrimethamine and sulfadiazine or pyrimethamine and clindamycin are the most commonly used regimens for chronic suppression of toxoplasmosis. In one study, daily pyrimethamine and sulfadiazine was more effective than a twice-weekly regimen (Podzamczer D, et al, *Ann Intern Med* 123:175, 1 August 1995).

Primary Prophylaxis—Doses of trimethoprim-sulfamethoxazole used to prevent PCP may also prevent first episodes of toxoplasmosis (Podzamczer D, et al, *Ann Intern Med* 1995; 122:755). A combination of daily dapsone and weekly pyrimethamine or both twice weekly may also prevent first episodes of toxoplasmosis (Girard P-M, et al, *N Engl J Med* 1993; 328:1514).

CRYPTOSPORIDIOSIS—Cryptosporidium can cause intractable diarrhea in patients with AIDS; no agent has been clearly shown to be effective for treatment. Management has included fluid therapy, nutritional support and use of antidiarrheal agents. In a recent controlled trial, octreotide *(Sandostatin),* a somatostatin analog, was no more effective than placebo (Simon DM, et al, *Gastroenterology* 108:1753, June 1995). A small controlled trial found less diarrhea while patients were taking paromomycin *(Humatin)* (White Jr AC, et al, *J Infect Dis* 1994; 170:419).

MUCOSAL CANDIDIASIS—Nystatin or clotrimazole—Nystatin *(Mycostatin,* and others) oral suspension or tablets or clotrimazole *(Mycelex)* troches are usually effective for oral thrush and can decrease recurrences. Vaginal candidiasis also often responds to topical therapy, but esophageal candidiasis generally does not. Adverse effects are negligible.

Fluconazole—The oral triazole fluconazole *(Diflucan)* is effective for treatment of oral or esophageal candidiasis and in preventing recurrences of oral thrush, but resistance has been reported (Newman SL, et al, *Clin Infect Dis* 1994; 19:684; Barchiesi F, et al, *Clin Infect Dis* 1995; 20:634). For patients with oral or esophageal candidiasis that has not responded to fluconazole for 14 days, itraconazole tablets or a new solution (available on a compassionate use basis from Janssen Pharmaceutica—1-800-378-4779) may be helpful. Resistant infections may respond to IV amphotericin B, high doses of fluconazole (800 to 1600 mg/d) or a combination of agents. Fluconazole is well absorbed even in the absence of gastric acidity. Nausea, rash and aminotransferase increases occur infrequently; hepatic necrosis has occurred in a few patients.

Ketoconazole—Oral ketoconazole *(Nizoral) is* effective for treatment of oral thrush, vaginal candidiasis and esophageal candidiasis. Normal gastric acidity is required for absorption and can be enhanced by taking the drug with a carbonated drink or cranberry juice. Anorexia, nausea, aminotransferase increases and adverse effects on testosterone synthesis and adrenal function can occur. Ketoconazole has adverse interactions with many other drugs *(The Medical Letter Handbook of Adverse Drug Interactions,* 1995, p 50).

SYSTEMIC MYCOSES—Amphotericin B—Amphotericin B *(Fungizone,* and others) is the standard initial treatment for systemic fungal infections in AIDS, including cryptococcosis, histoplasmosis and coccidioidomycosis. Common adverse effects are fever, chills and nausea during infusion, which can be attenuated by premedication with aspirin, acetaminophen or 25 mg IV of hydrocortisone, or treatment with 25 mg IV of meperidine *(Demerol,* and others). Renal insufficiency, hypokalemia and anemia may develop after several weeks of treatment.

Flucytosine—Flucytosine *(Ancobon) is* sometimes used concurrently with amphotericin B for treatment of cryptococcal meningitis in patients who do not have AIDS, but unpublished data from a controlled trial in AIDS patients, according to Medical Letter consultants, found no benefit from adding flucytosine. Leukopenia can occur, especially when serum concentrations of flucytosine exceed 100μg/mL.

Fluconazole—Oral fluconazole *(Diflucan)* achieves high concentrations in both cerebrospinal fluid (CSF) and urine. The drug has been used successfully to treat patients with acute cryptococcal meningitis (Haubrich RH, et al, *J*

Drugs for AIDS and Associated Infections

	Standard Treatment		*Alternative Treatment*	
Condition	*Drug*	*Dosage*	*Drug*	*Dosage*
HIV INFECTION[1]				
	Zidovudine[2]	100 mg PO 3-5x/day[3] or 200 mg q8h	ddC	0.375-0.75 mg PO tid
			Stavudine	30-40 mg PO bid
	ddI	125-200 mg PO bid[4]		
P. CARINII PNEUMONIA				
	TMP-SMX	15 mg/kg/d[5] PO or IV in 3 or 4 doses x 21 days	Pentamidine	3-4 mg/kg IV daily x 21 days
			Trimetrexate	45 mg/m^2 IV daily x 21 days
		+Folinic acid		20 mg/m^2 PO or IV q6h x 21 days
		Dapsone + Trimethoprim		100 mg PO daily x 21 days 5 mg/kg PO tid x 21 days
	± Prednisone[6]	40 mg PO bid, days 1-5	Atovaquone suspension	750 mg PO bid x 21 days
		20 mg PO bid, days 6-10	Primaquine	15 mg base PO daily x 21 days
		20 mg PO daily, days 11-21	+Clindamycin	600 mg IV qid x 21 days, or 300-450 mg PO qid x 21 days
Primary[7] and Secondary Prophylaxis[8]				
	TMP-SMX	1 DS[9] tab PO daily or 3x/week	Dapsone	50-100 mg PO daily, or 100 mg PO 2x/week
			± Pyrimethamine[10]	50 mg PO 2x/week
			Aerosol pentamidine	300 mg inhaled monthly via *Respirgard II* nebulizer
TOXOPLASMOSIS				
	Pyrimethamine[10]	50-100 mg PO daily[11]	Pyrimethamine[10]	50-100 mg PO daily[11]
	+ Sulfadiazine	1-1.5 9 PO q6h	+ Clindamycin	450-600 mg PO or 600-1200 mg IV qid
Chronic Suppressive Therapy				
	Pyrimethamine[10]	25-50 mg PO daily	Pyrimethamine[10]	50 mg PO daily
	± Sulfadiazine	500 mg-1 g PO q6h	+ Clindamycin	300 mg PO qid
CRYPTOSPORIDIOSIS				
	Paromomycin	500-750 mg PO qid		
CANDIDIASIS				
Oral	Nystatin solution or tablets	500,000 to 1,000,000 U PO 3-5x/day	Fluconazole	100-200 mg PO daily
			Itraconazole	200 mg PO daily
			Ketoconazole	200 mg PO daily
	or Clotrimazole troches	10 mg PO 5x/day		
Esophageal				
	Fluconazole	100-200 mg PO daily x 1-3 wks	Itraconazole	200 mg PO daily
			Ketoconazole	200-400 mg PO daily x 2-3 wks
			Amphotericin B	0.3 mg/kg IV daily x 7 days[12]
COCCIDIOIDOMYCOSIS				
	Amphotericin B	0.5-1 mg/kg IV daily[13]	Fluconazole	400-800mg PO daily
Chronic Suppressive Therapy				
	Amphotericin B	1 mg/kg weekly	Itraconazole	400 mg PO daily
			Fluconazole	200 mg PO bid
CRYPTOCOCCOSIS				
	Amphotericin B	0.3- 1 mg/kg IV daily[14]	Fluconazole	400-800 mg PO daily[15]
Chronic Suppressive Therapy				
	Fluconazole	200 mg PO daily[16]	Amphotericin B	0.5-1 mg/kg IV weekly
HISTOPLASMOSIS				
	Amphotericin B	0.5-0.6 mg/kg IV daily[17]	Itraconazole	200 mg PO bid
Chronic Suppressive Therapy				
	Itraconazole	200 mg PO bid	Amphotericin B	0.5-0.8 mg/kg IV weekly

Condition	Standard Treatment: Drug	Standard Treatment: Dosage	Alternative Treatment: Drug	Alternative Treatment: Dosage
CYTOMEGALOVIRUS				
Retinitis, Colitis, Esophagitis				
	Ganciclovir[13]	5 mg/kg IV q12h x 14-21 days	Foscarnet	60 mg/kg IV q8h or 90 mg/kg IV q12h x 14-21 days
Chronic Suppressive Therapy				
	Ganciclovir	5 mg/kg IV daily or 6 mg/kg IV 5x/wk or 1 gram PO tid	Foscarnet	90-120 mg/kg IV daily
HERPES SIMPLEX VIRUS, PRIMARY OR RECURRENT				
	Acyclovir	200-800 mg PO 5x/d[13]	Foscarnet	40 mg/kg IV q8h x 21 days
Secondary Prophylaxis				
	Acyclovir	400 mg PO bid	Foscarnet	40 mg/kg IV daily
VARICELLA ZOSTER, PRIMARY OR DISSEMINATED				
	Acyclovir	10 mg/kg IV q8h x 7-14 days	Foscarnet	40 mg/kg IV q8h
DERMATOMAL ZOSTER				
	Acyclovir	800 mg PO 5x/d x 7-10 days	Famciclovir Foscarnet	500 mg PO q8h x 7 days 40 mg/kg IV q8h
SYPHILIS:				
Primary, secondary, latent			For all stages:	
	Benzathine Penicillin	2.4 mil U IM20	Amoxicillin	2 g PO tid x 14 days
	or Doxycycline	100 mg PO bid x 14 days	+ Probenecid	500 mg PO tid x 14 days
	or Erythromycin	500 mg PO qid x 14 days	or Doxycycline	200 mg PO bid x 21 days
Late latent			or Ceftriaxone	1 g IM daily x 5-14 days
	Benzathine PCN	2.4 mil U IM weekly x 3	or Benzathine PCN	2.4 mil U IM weekly x 3 doses
	or Doxycycline	100 mg PO bid x 28 day	+ Doxycycline	200 mg PO bid x 21 days
Neurosyphilis				
	Aqueous PCN G	12-24 mil U/d IV x 10-14 days		
	or Procaine PCN	2.4 mil U IM daily x 10 days		
	+ Probenecid	500 mg PO bid x 10 days		
TUBERCULOSIS[21]				
	Isoniazid	300 mg PO daily		
	+ Rifampin	600 mg PO daily		
	+ Pyrazinamide	15-25 mg/kg PO daily		
	+ Ethambutol	15-25 mg/kg PO daily		
	or Streptomycin	15 mg/kg IM daily[22]		
Primary[23] and Secondary[24] Prophylaxis				
	Isoniazid[25]	300 mg PO daily[26]		
DISSEMINATED *MYCOBACTERIUM AVIUM COMPLEX*[27]				
	Clarithromycin	500 mg PO bid		
	or Azithromycin	500 mg PO daily		
	+one or more of the following:			
	Ethambutol	15-25 mg/kg daily		
	Clofazimine	100-200 mg daily		
	Ciprofloxacin	750 mg bid		
	Rifabutin	300-450 mg PO daily		
Prophylaxis				
	Rifabutin	300 mg daily	Clarithromycin or Azithromycin	500 mg PO bid 500 mg three times weekly

1. Concurrent use of two or more drugs may prove to be more effective than monotherapy.
2. Recombinant erythropoietin given subcutaneously at a dose of 100 U/kg three times per week has been used to treat zidovudine-induced anemia if endogenous serum erythropoietin levels are ≤500 IU/L. Zidovudine-induced neutropenia can be treated with G-CSF *(Neupogen)* in doses of 1-5,μg/kg subcutaneously once a day or three times a week (RT Mitsuyasu, *AIDS Clin Rev,* 1993-94, page 189).
3. At four-hour intervals. The package insert recommends a dosage of 100 mg at four-hour intervals five times daily for asymptomatic patients and six times daily for patients with symptoms. Low doses are generally better tolerated and may have clinical and virologic effects similar to higher doses.
4. With tablets: for patients <60 kg,125 mg PO bid; >60 kg, 200 mg PO bid. With powder, dosage varies from 167 mg to 375 mg bid. The drug can be suspended in water or juice for easier ingestion. Doses should be taken 30 minutes to one hour before meals or at least two hours afterward (CA Knupp et al, *J Clin Pharmacol*,33:568,1993).
5. Based on trimethoprim component

6. In moderate or severe PCP with room air PO_2 <70 mm Hg or Aa gradient 235 mm Hg.
7. Recommended for patients with fewer than 200 circulating CD4 cells per mm3, unexplained fever for two weeks or more, or a history of oropharyngeal candidiasis (*Morbid Mortal Weekly Rep*,44 RR-8:5, July 14,1995).
8. TMP-SMX or dapsone + pyrimethamine may also prevent toxoplasmosis, but aerosolized pentamidine does not.
9. Double strength .
10. Plus folinic acid,10 mg, with each dose of pyrimethamine.
11. After a 200-mg loading dose. Length of treatment determined by clinical response to therapy, usually eight weeks
12. Used in severe disease refractory to oral agents.
13. Length of treatment determined by clinical response, usually at least eight weeks.
14. Length of treatment is determined by clinical and serological response, but is usually at least two weeks.
15. Often used to complete acute treatment courses in cryptococcal meningitis.
16. 400 mg/day for first four weeks.
17. Length of treatment is determined by clinical response, but generally is at least four to eight weeks
18. G-CSF administered subcutaneously,1-8,ug/kg/d, has been used to treat ganciclovir-induced neutropenia.
19. Duration of treatment is determined by clinical response.
20. Many *Medical Letter* consultants recommend additional doses or other supplemental antibiotics.
21. Dosage for first few weeks to months, to be followed by intermittant doses (*Medical Letter*, 37:70, Aug 4,1995). Treatment should be continued for at least nine months and should be altered for drug-resistant strains.
22. For patients more than 40 years old,500 to 750 mg/day or 20 mg/kg twice/ week.
23. Tuberculin-negative HIV-infected patients with known exposure to active TB are usually treated prophylactically.
24. For tuberculin reactions >5 mm to intermediate-strength PPD and anergic patients at high risk.
25. A combined prophylactic regimen of daily rifampin and pyrazinamide for several months' duration has been advocated when exposure to isoniazid-resistant organisms is likely.
26. Usually continued for at least one year; some authorities suggest longer duration
27. The optimal duration of treatment is unknown; drugs have generally been continued indefinitely.

Infect Dis 1994; 170:238; Nightingale SD, *Arch Intern Med* 1995; 155:155). In one small randomized trial, however, amphotericin B plus flucytosine was superior to fluconazole for acute treatment of cryptococcal meningitis (Larsen RA, et al, *Ann Intern Med* 1990; 113:183). Subsequently, a large controlled trial found that a low dose of amphotericin B and a low dose of fluconazole were about equally effective in AIDS-associated cryptococcal meningitis in patients without altered mental status, but trends toward delayed CSF sterilization and increased early mortality were seen with fluconazole (Saag MS, et al, *N Engl J Med* 1992; 326:83). Fluconazole plus flucytosine may also be useful for treatment of cryptococcal meningitis (Larsen RA, *Clin Infect Dis* 1994; 19:741). Fluconazole alone may be used to complete a course of acute treatment for cryptococcal meningitis after the patient has improved clinically. For prevention of recurrent cryptococcal meningitis, daily fluconazole appears to be more effective and better tolerated than weekly amphotericin B (PowderlyWG, et al, *N Engl J Med* 1992; 326:793).

Fluconazole may also be effective in treating HIV-infected patients with coccidioidal meningitis (Galgiani JN, et al, *Ann Intern Med* 1993; 119:28).

Itraconazole—The oral azole itraconazole *(Sporanox)* has been used successfully to treat histoplasmosis and candidiasis in HIV infection, and to prevent recurrence of histoplasmosis and coccidioidomycosis (*Medical Letter* 1993; 35:7; Wheat J, et al, *Am J Med* 1995; 98:336). One trial found itraconazole less effective than fluconazole in preventing cryptococcal meningitis relapses (Nelson MR, et al, *AIDS* 1994; 8:651). Absorption of itraconazole may be irregular; determination of serum concentrations may be helpful. Adverse effects include nausea, epigastric pain, rash, headache, edema and hypokalemia.

HERPES SIMPLEX AND VARICELLA-ZOSTER VIRUS—Acyclovir—Oral acyclovir *(Zovirax)* can decrease the duration and severity of mucocutaneous herpes simplex virus (HSV) infections in HIV-infected patients, and can often prevent recurrences.

High-dose oral or IV acyclovir decreases the duration and severity of primary varicella or disseminated varicella-zoster virus (VZV) infection in HIV-infected adults. Adverse effects include nausea, headache and reversible renal dysfunction with high doses. Emergence of resistance has occurred in both HSV and VZV strains from HIV-infected patients treated with acyclovir.

Foscarnet—Foscarnet *(Foscavir)* has *in vitro* activity against all herpes viruses. It has been used successfully to treat HIV-infected patients with acyclovir-resistant HSV and VZV infections (Balfour HH, et al, *J AIDS* 1994; 7:254). Adverse effects include renal toxicity, anemia, nausea, hypokalemia, hypocalcemia, and hypo- and hyperphosphatemia.

CYTOMEGALOVIRUS—Ganciclovir—End-organ cytomegalovirus (CMV) infections in AIDS, most commonly retinitis, colitis and esophagitis, often respond to intravenous ganciclovir *(Cytovene)*. In CMV retinitis, continued daily maintenance infusions can delay relapse. After CMV esophagitis or colitis, routine secondary prophylaxis may not be necessary (Blanshard C, et al, *J Infect Dis* 172:622, September 1995). An oral form of ganciclovir

has recently become available for maintenance treatment of CMV retinitis in immunocompromised patients (Spector SA, et al, *J Infect Dis* 171:1431, June 1995; Drew WL, et al, *N Engl J Med* 333:615, 7 September 1995).

Neutropenia is a frequent dose-limiting adverse effect of ganciclovir. If zidovudine treatment is continued, the incidence of dose-limiting hematological toxicity may increase. Neutropenia from ganciclovir has been successfully treated with a granulocyte colony-stimulating factor such as G-CSF (*Medical Letter* 1991; 33:61). Ganciclovir-resistant CMV isolates have emerged in HIVinfected patients receiving chronic ganciclovir therapy.

Foscarnet—Foscarnet has been used to treat CMV infections in patients unable to tolerate ganciclovir and in those with ganciclovir-resistant disease. A randomized trial found the two drugs equally effective in the treatment of CMV retinitis, but patients treated with foscarnet survived slightly longer, possibly due to its antiretroviral effect (SOCA, *Ophthalmology* 1994; 101:1250; SOCA, *Arch Intern Med* 1995; 155:65). Foscarnet has been associated, however, with more treatment-limiting toxicity, and is more difficult to administer (*Medical Letter* 1992; 34:3). Some patients who have failed to respond to either ganciclovir or foscarnet have benefited from concurrent use of both (Dieterich DT, et al, *J Infect Dis* 1993; 167:1184).

MYCOBACTERIUM TUBERCULOSIS—Because of the increase in multiple-drug-resistant tuberculosis, treatment of tuberculosis in HIV-infected patients should initially include four drugs (isoniazid, rifampin *(Rimactane,* and others), pyrazinamide, and ethambutol *(Myambutol)* or streptomycin) and should be continued for at least nine months (*Medical Letter* 37:67, 4 August 1995). All HIV-infected patients with tuberculin reactions of 5 mm or more induration, regardless of age, should take at least one year of isoniazid for prophylaxis. Anergic, tuberculin-negative HIVinfected patients at high risk for tuberculosis—because of known contact, for example—should also be considered for isoniazid prophylaxis.

***MYCOBACTERIUM AVIUM* COMPLEX**—In patients with low CD4 counts, prophylaxis with rifabutin *(Mycobutin)* can decrease the incidence of *Mycobacterium avium* complex (MAC) bacteremia (Nightingale SD, et al, *N Engl J Med* 1993; 329:828; Ostroff SM, et al, *Clin Infect Dis* 21 suppl 1:S72, 1995). Rifabutin may, however, decrease plasma concentrations of zidovudine, can cause uveitis and has not been shown to prolong survival. Treatment of disseminated MAC infection with clarithromycin *(Biaxin)* or azithromycin *(Zithromax)* given concurrently with one or more other antimycobacterial drugs has increased survival (Ives DV, et al, *AIDS* 1995; 9:261). Clarithromycin may, however, increase serum concentrations of rifabutin and decrease serum concentrations of zidovudine (Goldberger M, Masur H, *Ann Intern Med* 1994; 121:974).

SYPHILIS—In HIV-infected patients, syphilis may have an accelerated clinical course and prominent neurological involvement, and may relapse despite standard treatment regimens. Many authorities now recommend longer treatment courses for primary or secondary syphilis in HIV-infected patients, and urge that HIV-infected patients with serologic evidence of syphilis be evaluated for neurosyphilis and treated aggressively, if necessary (Malone JL, et al, *Am J Med* 99:55, July 1995; Gordon SM, et al, *N Engl J Med* 1994; 331:1469).

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A Program on the Rise: The Combined (M.D./Ph.D.) Degree Program at the University of Connecticut School of Medicine

DOMINICK L. CINTI, PH.D.

ABSTRACT—The Combined M.D./Ph.D. Degree Program (CDP) of the University of Connecticut School of Medicine is an intensive seven-year program that allows exceptional students simultaneously to develop both clinical and research skills. Each year the program accepts up to four highly qualified students from an applicant pool that has been increasing in both size and talent.

Currently, there are 25 students in the program. Each student receives a waiver of tuition and fees for both graduate and medical school as well as a fellowship stipend of $14,700 per year for all seven years.

In the initial two years the combined-degree students are enrolled in medical school and participate in laboratory research. During the next three years students focus exclusively on graduate course work and the doctoral dissertation. Following the thesis defense, they enter the final two years of medical school and are graduated with the dual degree.

As of May 1995 the CDP has graduated 15 students, each of whom is currently pursuing a career in academic medicine.

Introduction

THE decade of the 1960s was a period of unprecedented growth in the number of new medical schools in the United States. The University of Connecticut School of Medicine was among these, its first medical students having been accepted in 1968.

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Within a few years several interrelated medical and scientific issues became apparent on a national level. These included: the increasing complexity and rapid expansion of both basic medical science and biotechnology, the growing sophistication necessary to conduct research, and the diminishing interest in biomedical research on the part of young clinical faculty, M.D. fellows, house staff, and medical students. These issues suggested a need to educate more physician-scientists. Citing evidence obtained from the National Institutes of Health training grant programs, Wyngaarden in a 1979 presidential address to the Association of American Physicians rang the alarm that the clinical investigator was becoming an endangered species.[1]

Given the importance of persistent excellence in medicine and science for our society as well as the significant share of our economic and human resources committed to them, the continuation of scholarship in both must be of paramount concern.

University of Connecticut School of Medicine Combined M.D./Ph.D. Degree Program: Brief History of Development

These events prompted faculty in the School of Medicine to develop a combined M.D./Ph.D. degree program. Designed for exceptional students interested in careers in medical research and academic medicine, the combined degree program (CDP) is an intensive seven-year program that allows students to acquire both clinical and research skills which can be applied to basic problems in human disease. The program meets the requirements of the graduate school for the doctor of philosophy degree and of the School of Medicine for the doctor of medicine degree. The intent of the CDP is to allow a student to combine the

Table 1.—Graduate Programs Offering the Ph.D. Degree at the University of Connecticut Health Center
1. Cell Biology
2. Cellular and Molecular Pharmacology
3. Developmental Biology
4. Immunology
5. Molecular Biology and Biochemistry
6. Neuroscience
7. Oral Biology

curricula of the graduate and medical schools and complete the requirements of both schools in a period less than that required if the graduate and medical studies were taken in sequence, ie, seven years rather than nine or more years. Although this time-saving is intended to make the CDP more attractive, in no way does the CDP alter, dilute, or circumvent the requirements for either the Ph.D. or the M.D. Rather it efficiently and effectively utilizes the strengths of each school. The program was approved by the School of Medicine in January 1978.

The uniqueness of a CDP is its potential to develop highly qualified persons with a broad view of both science and medicine. The combined degree graduate differs from the basic scientist in having a wealth of medical knowledge needed to study human disease. At the same time the dual-degree scholar differs from the physicianwith only the M.D. degree in having been extensively schooled in the fundamental principles of the scientific method which can then be applied to biomedical research. Thus, the CDP provides the training necessary to allow the graduate to "catalyze the transformation of basic scientific advances into effective medical treatments."[2] Today, the appeal for the combined degree scholars can be seen in the recruitment efforts of academic medical centers, governmental agencies, and industry.[3]

Academic Program

The initial two years of the CDP represent the first and second year of medical school which at the University of Connecticut concentrates on the basic medical sciences curriculum, problem-based learning,[§] principles of clinical medicine,[†] student continuity practice,[‡] and preparation for Part 1 of the United States Medical Licensing Examination.

During these first two years the education of the CD candidate is augmented with several research experiences. In the summer prior to the initial fall semester each entering student is encouraged to participate in a laboratory rotation. This research experience not only provides insight into research methods, but also affords the students an opportunity to familiarize themselves with the various graduate programs and the faculty associated with those programs. Following the completion of the first academic year the combined degree students participate in a second laboratory rotation of their choosing. The third and final laboratory experience occurs during the summer following the second year, immediately after the National Board Examination.

An essential feature of the CDP is the Research Seminar Club in which the CD students meet biweekly throughout each academic year. At each meeting a student presents a seminar based on research he or she has accomplished during a laboratory rotation. Initially these presentations are based on summer research; in later years on research performed during the academic year. The student's seminar is supplemented with a brief discussion by a faculty member of the research currently being performed in his or her own laboratory. Once a month a scholastic clinical component is interwoven into the Research Seminar Club by means of student participation in a clinical pathological conference presented by a member of the clinical faculty.

Selection of a graduate program and a major thesis advisor occurs at the end of the summer following the second year. Table 1 shows the seven graduate programs that offer the Ph.D. degree.

Advanced coursework as determined by the student's advisory committee and the research for the Ph.D. dissertation occupy the third, fourth, and fifth years of the CDP. At the end of the fifth year students submit the completed thesis and prepare for the oral thesis defense.

In an effort to reawaken and refresh their clinical skills and to prepare them for the clinical clerkships, in the final semester of the fifth year the CD students are required to perform a complete history and physical examination on a standardized patient.[¶] They then return to the medical school to complete their clinical rotations (years six and seven). At the end of the seven years they are awarded the dual degree.

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§Problem-Based Learning: Small groups of students are given a clinical case or laboratory problem and a small amount of data from which they develop hypotheses and define learning issues. These serve as the basis for extensive reading. Further discussion then ensues, after which additional data are provided and the process repeated until resolution is achieved.

†Principles of Clinical Medicine: This program teaches the fundamental skills, attitudes, and knowledge needed to practice clinical medicine. Its focus is on the patient, on the developing physician, and on the special and complex relationship between them.

‡Student Continuity Practice: One-half day per week each student works in the office of a physician, experiencing a wide range of patient problems and treatments.

¶Standardized patient: A person who has been trained to act as a patient as well as to evaluate the student.

Table 2.—Essential Features of the Combined-Degree Program

1. Limited to a maximum of four students per year
2. Seven-year program
3. Waiver of medical school tuition and fees* for all four years
4. Waiver of graduate school tuition and fees* for all three years
5. Fellowship stipend for each of the seven years (currently, $14,700 per year)
6. At graduation, M.D.-Ph.D.

*For the '95-'96 academic year medical school tuition & fees are $11,300 for Connecticut residents and $21,650 for out-of-state residents; graduate school tuition and fees are $4,900 for Connecticut residents and $12,574 for out-of-state residents.

Admissions Process

The School of Medicine participates in the American Medical College Application Service, which administers a centralized application process. Admission to the CDP is a two-step process in which the application is initially reviewed by the medical school admissions committee followed by the final review and selection by the CDP admissions committee. Evaluation criteria include: a) undergraduate academic performance, b) rigor of the undergraduate academic program, c) Medical College Admission Test scores and, if available, Graduate Record Examination scores, d) recommendations, especially from research advisors, and e) the interview. The entering medical school class comprises approximately 80 medical students and three to four combined degree students each year. The small number of CD positions fosters a highly competitive and selective admissions process.

Combined-Degree Program Fellowships

Despite the long, arduous road that the student must travel to attain the dual degree, there are substantial benefits. Each student entering the program is provided with a fellowship that includes waiver of both medical and graduate school tuition and fees; in addition, he receives a yearly stipend, currently $14,700. Table 2 summarizes the key features of the CDP at the University of Connecticut School of Medicine.

Application Pool

The advent of the 1990s decade brought out-of-control health-care costs and politically-inspired chaos to the health-care system. The practice of medicine has been radically altered by such third-party payers as the insurance companies and the health maintenance organizations. Yet, despite the current turmoil, applications to medical schools have surged to record numbers.

Table 3.—Academic Profile of Students Admitted to CDP

Entering Year	Sci GPA	Total GPA	MCAT
1992	3.53	3.60	31.7 (90%)#
1993	3.67	3.66	34.0 (93%)
1994	3.70	3.64	32.3 (91%)
1995	3.94	3.90	33.0 (92%)

#Composite Mean Percentile Ranking of the three areas of assessment: Physical Sciences, Biological Sciences, and Verbal Reasoning.

In 1974 the number of applicants to medical schools in the U.S. reached an all-time high of 42,624.[4] In the remaining decade and throughout the 1980s, the application pool continued to decline, reaching its lowest point in 1988 (26,721 applicants). The following year the trend reversed itself, and by 1993 a new record of 42,808 applicants was established, only to be broken in 1994 and again in 1995. As shown in Fig. 1 the application pool followed a similar trend at the University of Connecticut School of Medicine. Since the first entering class in 1968, applications reached an all-time high in 1993, only to be broken in 1994, and again in 1995 when for the first time the applicant pool surpassed 3,000. Even more impressive is the greater than eight-fold increase in the number of applicants to the CDP during the past four years (Fig. 1). For the 1995 entering class there was a record 173 applicants vying for three available positions.

In summary, from 1992 to 1995 overall applications to U.S. medical schools increased by 25%, applications to the University of Connecticut School of Medicine increased by 53%, and applications to our M.D./Ph.D. Program increased by 823%. While many medical schools now have combined degree programs, national data relative to the number of applicants to these programs are not available. In general, there appears to have been an enhanced interest in them in the past decade. However, in the absence of analogous data it is not certain whether the dramatically increased number of applicants to the University of Connecticut's program reflects a national trend or is unique to our institution.

Students in the Combined-Degree Program

Currently there are 25 students enrolled in the program, nine are women and four are from underrepresented minorities.

While most of the students have been educated at colleges and universities in the Northeast, approximately 30% have graduated from schools elsewhere in the country or in Canada. The schools attended by these students include Amherst, Boston University, Brown University,

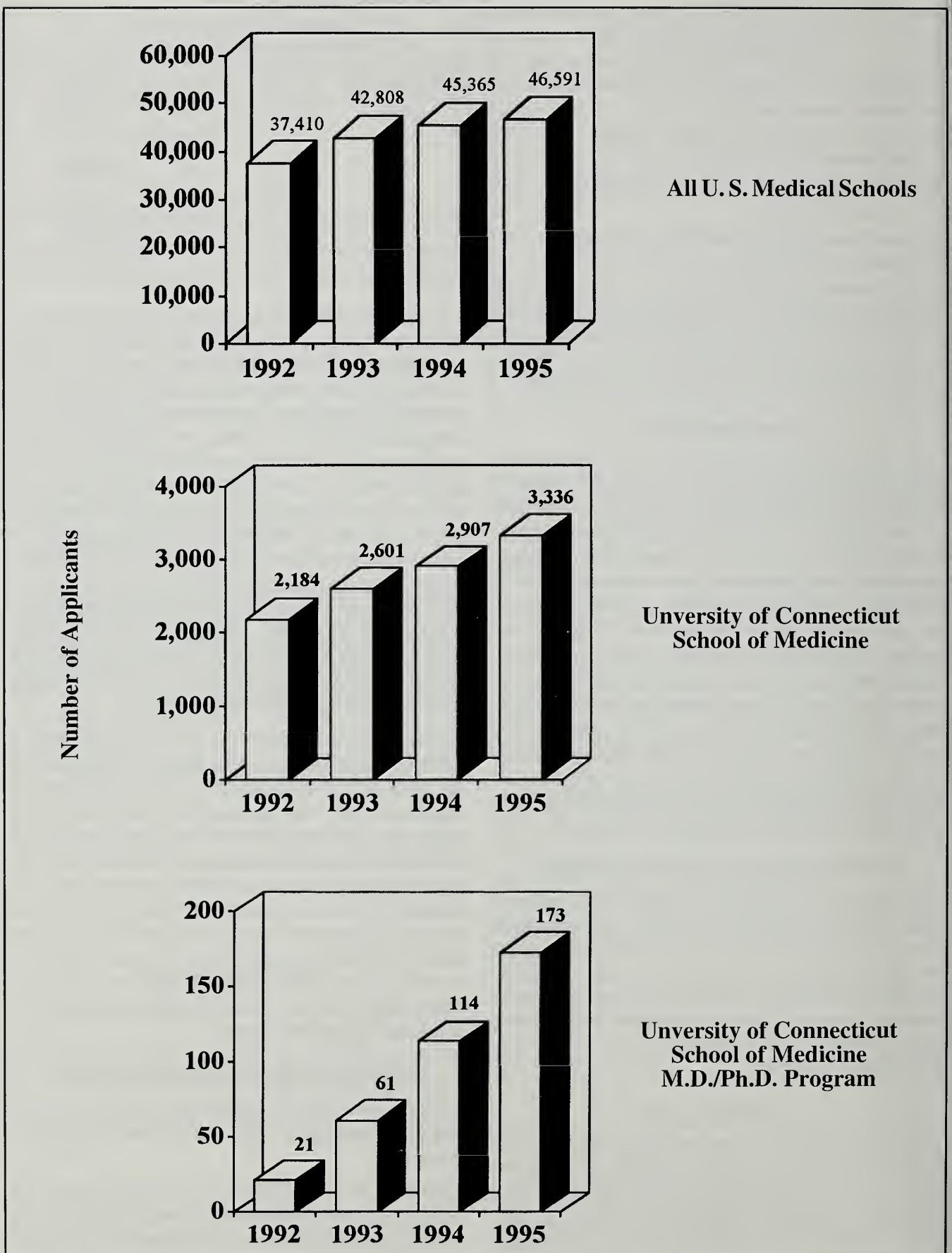

Figure 1.—The number of applicants to: all U.S. medical schools, the University of Connecticut School of Medicine, and the combined M.D./Ph.D. degree program in the School of Medicine at the University of Connecticut for each of the past four years.

University of California-Berkeley, Carleton College, Case-Western, Colby, Columbia University, Connecticut College, University of Connecticut, Cornell University, Dartmouth, Drew, Georgetown, Harvard, Holy Cross, University of Pennsylvania, Princeton, Rush College, Rutgers, Smith, Southern Maine University, Trinity College, Tufts University, Washington University-St. Louis, Wesleyan, William and Mary, and Yale University. In addition, three Canadian schools are represented: McGill University, Memorial University of Newfoundland, and University of Toronto.

The academic profile of entering CD students over the past four years may be seen in Table 3. Strong academic performance has been achieved in both sciences and total grade point average. Performance on the Medical College Admissions Test has been at or above the 90th percentile. These students have continued to excel in our CDP.

Profile of Our Graduates

Through May 1995, 15 students have graduated from the University of Connecticut Combined M.D./Ph.D. Degree Program. The average number of years required to complete the program was 7.1; 10 of the 15 graduates obtained the dual degree in seven years, one in 8.5 years, two in eight years, and two in six years.

These graduates have selected and entered academic residency programs at competitive institutions, such as Baylor, Brigham and Women's, Duke, University of Pennsylvania, Washington University-St. Louis, Yale, etc.; 14 of 15 graduates have obtained their first choice in the residency match. Currently, eight graduates are in residency training; five have completed residency and are in research fellowships at preeminent programs. This relatively young program has born its initial fruits with two of our graduates having completed their postgraduate medical and research training. Both are currently professors on medical school faculties pursuing research careers in medicine.

Conclusions

Given the number of highly qualified applicants to the M.D./Ph.D. program at the University of Connecticut School of Medicine, it is clear that many exceptional students are pursuing a career in medical research. With the explosion of molecular biology, our understanding of the molecular pathogenesis of human diseases has been nothing short of phenomenal. The continuing assault on and dissection of the human genome provides opportunities for medical advances that will aid clinicians of the future in caring for their patients. The physician-scientist will continue to be a key player in these medical discoveries.

Despite today's unrest in medicine, the increase in medical school applicants in general as well as the remarkable growth in applications to the combined degree program provides reassurance that the high level of quality care given by the physician and physician-scientist will continue. The combined degree program at the University of Connecticut is supporting that continuity.

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Medical Society Takes on Issue of Media Violence

WILLIAM PETIT, M.D.

I would like to make people in the community aware that the Public Health Committee of the Connecticut State Medical Society has released a position statement on reducing violence in the media.

This committee, which had been spearheaded by Dr. Benjamin Gordon, involved input from the Parent Teachers Association of Connecticut, Connecticut Psychiatric Society, Connecticut Nurses Association, Connecticut Psychological Association, and several other major organizations.

The committee became quite concerned that violence in the media was rapidly becoming a serious potential health hazard to children.

It was estimated that, by the time children graduated from high school, they had viewed more than 200,000 acts of violence. There are now more than 200 studies that indicated watching violence on television is consistently associated with aggressive action in preschoolers, adolescents and young adults.

It is felt that a critical issue is that screen and television characters are role models and that the frequent use of violence to respond to minimal slights as seen on television is an appropriate way to handle differences.

Reprinted with permission of WILLIAM A. PETIT, M.D. from *The Bristol Press,* 22 January 1996, p A5.

WILLIAM A. PETIT, M.D., a Plainville physician is immediate past president, American Diabetes Association Connecticut affiliate and assistant clinical professor of medicine, Yale University School of Medicine.

We need to educate our children that true heroes in society solve personal and social problems with patience, sensitivity, integrity, and respect. It is hoped that input from people from all over the state can encourage those of us in the community to make a personal commitment to provide Connecticut children with a healthier lifestyle by limiting our children's viewing of violent programs and providing alternative programs.

We must do so by presenting a strong and unified voice to the local media, expressing our serious concerns about violence in children's programs and encouraging age-appropriate programs during peak children's-viewing hours.

The position statement to reduce violence in the media is as follows:

"We, the undersigned, object to the images of violence undermining the development of healthy problem-solving skills in children. We, the undersigned, refuse to watch movies and television programs with unnecessary violence or cruelty in favor of constructive and entertaining programs. We, the undersigned, will not support those companies that sponsor programs that have an excessive violent content."

If you agree with this position, please forward your name, address and signature on this consensus statement to the Connecticut State Medical Society, Committee on Public Health, 160 St. Ronan Street, New Haven, CT 06511. These signatures will be forwarded to the local television station or nearest cable company, and to the corporate sponsors.

Pediatrics: A Way of Life

ALEXANDER MENZER, M.D.

AFTER 43 years of practice in pediatrics, let me tell you a little bit about myself. In 1933 I started medical school in Vienna, and in 1939 I received my M.D. degree at the University of Basel. After World War II, in the spring of 1950, my wife and I decided to leave Europe to settle in the United States. Because I had graduated before 1940 I was allowed to take my license examination as soon as I arrived in the United States. After four weeks of studying I got it for New York and later for Connecticut. For graduates after 1940, with the exception of those from England, no foreign medical school graduates were recognized here, and at this time there was no reciprocity for foreign graduates. It was a very busy time for me. I had the feeling that mankind was divided into two groups: People who give examinations and people who take them. After a year of internship in Mt. Vernon, New York, I was accepted for a residency in pediatrics at the Hartford Hospital, and in 1953 I went into private practice, first in Hartford on Farmington Avenue, three years later in West Hartford. By 1956 I had my board certification from the American Board of Pediatrics.

At this time, no child with a fever would ever be brought to the office; I made many housecalls, whenever I was asked, and covered many well-established pediatricians who took time out for vacations. I recall one hot Sunday in August when I made 18 housecalls! For seven years I did not take any vacations. At this time, in the 1950s the charge for a housecall was four or five dollars. When I asked for payment, the answer usually was: "Please bill me." In at least a third of the cases I was never paid, only promised. I remember visiting families with three or four children. Looking at their apartment and furniture, I could see how these families had to struggle. In such cases I left, more than once, some money to make sure that they would buy the medicine I had ordered. My practice was growing and I tried to work with "detached concern." Today I would advise: give the best medical care, but do not get too emotionally involved, because this will cloud your judgment. Do not put too much stress and strain on your heart! Despite that, in 1992 I had to undergo open heart surgery!

During my 43 years of practice, I received hundreds of letters from grateful parents, grandparents, brothers, sisters, and even from my now grown-up patients.

In the beginning of the 1950s, there was always the scare of polio. Once I received a phone call from the Cape. There was the possibility that a patient of mine had polio. The mother hired a plane to come immediately home and to my office. Luckily it was a false alarm and she said to me: "And all these expenses and worries for nothing!" Another call, close to midnight, from a mother from the emergency room. A three-year-old girl with a high fever who did not look too good! The mother would allow nobody to touch her; she insisted that only her own doctor, Dr. Menzer, would do!

ALEXANDER MENZER, M.D., age 81, announced his retirement from the practice of pediatrics in West Hartford this year. I asked him to reflect on his life and practice for *Connecticut Medicine*—ed.

There was a close relationship between parents, children, and their pediatrician, and his words and presence counted. In all these years, there never was an interference from any insurance company. I lived and practiced guided by my personal ethics and *primum non nocere.* Especially in pediatrics there is a different relationship. In a normally functioning family, if a child is sick, everybody gets involved, even when you know there is no reason for the excitement. In cases of infections, children have the tendency to run a high fever. After the proper medicine is given, the fever drops fast. I always asked mom to record the daily morning and evening temperature, and report to me by phone. By recording it at least twice a day, and calling, I kept mom busy, so she had less time to worry too much.

Once I got a call from Rhode Island. "This is Mrs. Meyer. I would like to know how my grandson is doing." "I am sorry," I answered, "but I have no Baby Meyer." "My daughter gave me your name as her pediatrician." We started to argue over Baby Meyer. Finally I asked her. "Is your daughter married?" There was a long pause. "Certainly she is married." "What is her married name?" Grandma answered, "Walser." So the riddle was solved; I had a Baby Walser!

When I started out, I worked part time at McCook Hospital and clinic in Hartford. There I met people from different countries and backgrounds. I had plenty of time to talk to them in detail. In such families, grandmother was always the most important reference. If she spoke no English, one of the older children was the interpreter, or one of the nurses understood and made everything so much easier for me.

When I asked for a second opinion or a surgeon, they agreed only as long as the insurance would cover it.

I was dedicated to my practice and my families. Pediatrics is a rewarding specialty, but it is no money making enterprise. My own family often complained of being neglected. When my older girl was in the second grade, her teacher called my wife to stop by to read one of Marion's essays. "I never will marry a doctor, he never is home. My girlfriends have fun with their Dad, mine never has time and I resent it." After reading this, I tried to be more at home with my family. I recommend a book by Carla Fine: *Married to Medicine.* I repeat, pediatrics is a very rewarding field. There is no money in it, but there is a lot of joy, satisfaction, and gratitude.

50 Years Ago

From *The Connecticut State Medical Journal*

February 1946

Memorandum on the President's Message to Congress on a National Health Program, House Document No. 380, Prepared for Senator Thomas C. Hart by the Connecticut State Medical Society

ON November 19, 1945, the President of the United States transmitted to the House of Representatives a message and a request for legislation for a National Health Program. On the same day Senator Wagner of New York introduced for himself and Senator Murray, Montana, S1606, a new version of the Wagner-Murray-Dingell Social Security Bill. An identical measure was introduced into the House by Representative Dingell, Michigan. The language of the President in his message to the Congress and of Senator Wagner in his comments on his Bill and the timing of the introduction of S1606 leads to the obvious conclusion that the proposed legislation is for the purpose of implementing the President's message asking for legislation on a National Health Program and the two documents, ie, the President's message and S1606 are both being considered in this memorandum.

In the opening of his message the President restated, "The right (of the people) to adequate medical care and the opportunity to achieve and enjoy good health," and added that "millions of our citizens do not now have a full measure of opportunity to achieve and enjoy good health ... The time has arrived for action to help them to obtain that opportunity and that protection."

No thoughtful person will disagree with this broad statement, but it is not alone medical care that is needed to achieve the objective which the President sets. To improve the health of all the people will require also an improvement in diet, in housing and in clothing, in general to improve the entire economic standard of the people. More medical care alone will not do it.

Selective Service Rejections

It is unfortunate that the President was beguiled by his advisors to cite rejections under the National Selective Service as evidence of inadequate medical care in this country. As soon as the results of the operations of the Selective Service were known, they were seized upon by propagandists for national health insurance as final and conclusive evidence that medical care in this country was bad and that as a result a nation of weaklings was developing. When good objective analysis was brought to the Selective Service rejections, it became quite clear to fair observers that they were only in the slightest measure related to medical care and the force of the argument rapidly depreciated. The President would have been upon safer ground and more convincing had he not stressed so strongly the Selective Service results which are no longer viewed with hysterical concern.

The standards of physical fitness for enlistment in the Army or Navy were established by military experts to fit the demands of campaign and bore only casual relationship to productive citizenship and useful living. It was well known that the physical standards for acceptance in the Marines and the Navy were above the standards for the Army and many men rejected by the Navy were acceptable in the Army. So then it becomes quite clear that if the Navy standard had applied universally, the number of

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rejections in the Selective Service would have been increased and conversely had the Army standard applied, the number of rejections would have been lower and the cause for the fancied alarm would have been less. The physical standards for military service changed from time to time and men who were rejected as unfit in the first year of the war were accepted as quite fit for full service later on.

Furthermore, an analysis of the cause for rejections shows that the vast majority of them could not have been made more fit by any knowledge available to medicine. Some persons who have quoted the Selective Service rejections have not always been intellectually quite honest. The President, among others, quotes a figure, "nearly five million," actually the number given in the report was 4,217,000 which is somehow an error of about thirteen per cent. But, even so, an analysis of the cause for these rejections must be of interest. 444,800 were rejected as manifestly disqualified, the totally blind, the totally deaf, the deaf mutes, the legless, the armless and the conspicuously deformed. No program of medical care could have influenced this figure. 701,700 were rejected for mental disease and medical science has not yet progressed far enough to know how this could have been prevented for these unfortunate people. 582,100 were rejected for mental deficiency: imbeciles, idiots and morons. This is a question of eugenics not medical care. These three groups together constitute a total of 1,727,600. When these have been excluded, 2,426,500 or somewhat less than half of the originally claimed five million remain. Of these 320,000 were rejected for muscular-skeletal defects, such as club foot, withered arms, congenital dislocations and the like. Medical care could no doubt have made these people happier at times, but it could not have restored them to military usefulness. The 280,000 having syphilis are interesting. It is probable that no disease has had so much public attention given it in late years as syphilis. There can scarcely be a community in the country where a person afflicted with syphilis cannot secure free treatment from health department clinics and yet there were more than a quarter of a million rejections because of it. 160,000 were rejected under the title, "Eyes." This figure includes visual defects. Except for the results of injury, visual defects are always congenital and can be most often corrected by wearing glasses, but medical care has nothing to do with their prevention or their cure, and if military service called for a high degree of visual acuity which was lacking in 160,000 rejected registrants, it is difficult to see how it is an indictment against the American system of medical care. Actually then, these Selective Service rejections which might have been forestalled by more medical care dwindled to perhaps a million and a half instead of the often quoted five million. So much has been made of the rejections by the Army and the Navy, it might be well to compare American rejections with those in England which has operated under a system of national health insurance for more than thirty years. It is reliably stated, but not confirmed, that the physical standards for military service in England are below those in this country, but in spite of this, rejections for physical defects were twelve per cent higher there.

Federal Aid for Hospitals

The President's proposal for Federal aid for the construction of hospitals has long had the approval and support of the American medical profession. This objective is embodied in S191, The Hill-Burton Bill, which has already passed the Senate. When local need is demonstrated, it is quite generally agreed that Federal aid for the construction of hospitals and health centers is desirable.

Maternal and Child Health Services

Legislation to extend maternal and child health services under Federal finance and control is already contemplated in S1318, the Pepper Bill. No person should disagree with the President as to the desirability of extending maternal and child health services when need is demonstrated, or object to the use of the Federal or state funds to meet this need. In its effort to carry out this phase of the President's program, the Wagner Bill gets into strange confusion as to the administration between the Children's Bureau of the Department of Labor and the Surgeon General of the Public Health Service. This confusion serves only to emphasize the need for coordination of all Federal medical and health activities under a single responsible head and the early transfer of the medical functions of the Children's Bureau to the Federal Security Agency.

Research

There is universal agreement that much of the nation's scientific and medical research should be carried out with government support and coordination. Care must be taken, however, that this is done under the most skillful guidance and at no point becomes an object for political aspirations. The program should be directed by a board of competent scientists given full autonomy. Medicine in America wants more research in the "broad fields of physical and mental illness" and in cancer. It cannot be static.

Medical education is of necessity becoming increasingly expensive. Federal aid to assist schools of medicine to extend their usefulness seems almost certain after the drying up of the generous springs of private philanthropy, but Federal control of medical educational policies and objectives would be a step to lower medical education in America to a commonplace level as always happens when such things are so controlled.

Loss of Earnings Due to Sickness

Medicine has long been of the opinion that it was lose of earnings that kept many people from seeking medical care rather than the cost of that care. The President's proposal to protect against the loss of wages from sickness or disability could be as useful a step as could be taken to improve medical care and remove the anxiety of sickness. These plans, however, are subject to wide exploitation in that they offer opportunity in periods of slack employment to extend or conjure up illness. Ingenuity will be required in the drafting of such legislation and its administration, otherwise, one of the purposes to cut down the amount of time lost because of illness will be defeated.

National Health Insurance

The President proposes a system of National Health Insurance. It is with this that the physicians of America are gravely concerned. The President lays great emphasis on his opinion that it is not "socialized medicine."

"I repeat—what I am recommending is not socialized medicine."

Quibbling over definitions will not give better nor worse medical care to the people of America. The President obviously has been maneuvered into a position where he feels he is on the defense. If his proposed program is good and right for America, it should make no difference to him if it is "socialized medicine" and it will take more than his emphasis and the reiteration of propagandists to convince medicine and others who support American ideals that this is not a move to bring a great and essential profession into a collectivist scheme.

Careful inquiry should be made as to who wants National Health Insurance in America. Let it be asked of representatives in Congress if they have in fact sensed a great public demand for the socialization of medical care. There is much that would lead to the conclusion that persons behind it are leaders of the labor movement in this country and abroad. Further exploration should be made into the relationship of the International Labor Organization to this proposed legislation. Does it spring from the hearts and minds of the American people or is it being imposed upon them by a subtle international organization? After satisfying one's self on that and admitting the need of national health insurance in this country, it would be well to know whether it would achieve the object for which it is intended. Compulsory health insurance has been in effect in many parts of the world for long periods of time and from that experience, it is possible to discover the effect such plans have on public health, on morbidity and mortality.

Germany and England are the two health insurance countries which most readily can be compared with America. Health insurance has been in existence in Germany for nearly sixty years and in England for more than thirty years. One of the things that health insurance has promised to do is to cut down the time lost because of sickness. This is reflected in general in morbidity tables. In the United States the rate of sickness is about twenty per cent or about one out of five persons is sick each year. In pre-war Germany, the population was evenly divided, those covered by the insurance program and those who were not. Among the uninsured the expectancy of sickness was identical to that in this country, that is twenty per cent, but among the insured, it was two hundred per cent. Good commentators on these figures express the idea that malingering for the purpose of collecting cash benefits which are received by a sick person is an important factor. In this connection, Nathan Sinai, an able proponent of compulsory sickness insurance, in his book, "The Way of Sickness Insurance" has written, "Contrary to all predictions the most startling fact about the vital statistics of insurance countries is the steady and fairly rapid rate of increase in the number of days the average person is sick annually and the continuously increasing duration of such sickness. Various studies in the United States seem to show that the average recorded sickness per individual is from seven to nine days per year. It is nearly twice that amount among the insured population of Great Britain and Germany and has practically doubled in both countries since the installation of insurance."

The compulsory health insurance proposals in the President's message are dangerous, they are first dangerous to American institutions, they are dangerous to the quality of medical care and the progress of American medicine, and above all they are dangerous to the people of America. It is said by persons high in government, that the health insurance proposal is the result of constructive suggestion of many outstanding medical authorities. The fact in the matter is that neither the President nor Senator Wagner nor the Social Security Board, where the Bill is supposed to have originated, have made any attempt to consult any representatives of the American Medical Association which now includes in its membership more than 125,000 American physicians, the people who do and must continue to deliver medical care in America.

Surely, medical service should be available to all who need it, but not as a political handout, not as a commodity, but as a service of high quality delivered by the best trained physicians that the country's traditionally fine institutions can produce. With this standard, American medicine cannot compromise.

Testimony of the Connecticut State Medical Society to the Medicaid Managed Care Council

11 January 1996

Good afternoon members of the Medicaid Managed Care Council. My name is Dickerman Hollister, President of the Connecticut State Medical Society, internist, oncologist, and Medicaid provider. I am here today to present our testimony regarding the Medicaid Managed Care Program.

I would like to open my comments by stating that Connecticut physicians fully support the *goals* of this program, which are to increase access and encourage appropriate utilization of medical services. We recognize that problems are inherent to the implementation this program and we appreciate the efforts that were taken by the Department of Social Services to avoid the disasters that have occurred in other states. We also appreciate the concern of the legislators, the work of this Council, and the dedication of the physicians who sit on it.

Realistically, it may take several months, if not years, to develop a smoothly running Medicaid managed care program. We are dealing with a major change in health coverage for a large patient population. However, now that we have tested the waters, it is time to stand back, take a deep breath, and review the situation while focusing on our goals. Physicians do have concerns with the program and as I outline these concerns I want to let you know that I am not here to leave them on your shoulders, but to begin to work with you to find solutions.

We all want to see this program work, and to make it work effectively we need wide physician participation. In the past, the low fees and the excessive administrative burdens discouraged many private physicians from participating in the Medicaid program. Now, as you know, the current HMO fee schedules are not much better and in some cases worse due to withholds. In addition, a managed care system increases the administrative burden on the providers, particularly the primary care providers. So for the physicians who are willing to enter this new system and work toward making it a success, we must take their concerns seriously and work toward addressing them quickly.

To assist in this effort, the Connecticut State Medical Society has established lines of communication with the Department of Social Services and we are willing to do the same with the managed care plans. We have offered to establish a formal relationship with the Department to consult on patient care, quality assurance, and program monitoring.

I know that this Council has been concerned with the pace of the program's implementation and so have we. The administrative problems that have arisen due to the rapid implementation and enrollment have caused particular hardship to physicians because we are ultimately responsible for these patients. For instance, if a patient arrives at my office with a headache and I cannot verify eligibility or whether or not I am that patient's primary care provider, I have a choice of either treating that patient or sending that patient away risking both their health and my liability. So I treat this patient and if that claim is eventually denied, the only person that will be penalized is me because I will not be reimbursed for my services. Similarly, due to the immaturity of the networks and the newness of the program, it will take my office staff several hours of phone time and administrative work to handle these claims, referrals, and preauthorizations.

This situation may not have been avoided due to the magnitude of the changes involved, but the hassles and the frustrations are real. We must address the situation now before we alienate the very physicians that will make this program a success. We need to increase the responsiveness of HMOs to physician inquiries about eligibility, benefits, referrals, etc., so we don't waste our time navigating through tedious voice menus or sitting on hold. This causes frustration among physicians and our staffs, and this can only be to the detriment of patient care.

I met with Commissioner Thomas to address this situation and she was very receptive to our concerns. We did review

(continued on next page)

the possibility of delaying further implementation until some of these problems have been worked out. Alternatively, we might suggest that a "grace period" be put in place during which providers would not be penalized for rendering care when issues of eligibility could not be resolved in a timely fashion. In the meantime, we need the support of you and the Department of Social Services to stress to the managed care companies the need to streamline and update the plan administration. Particularly important is the need for accurate, updated lists of primary care providers and specialists. I need to send a message to the physician community that there is a light at the end of the tunnel and that while we are all working toward the eventual smooth operation of these plans, we are not going to penalize those who now are making the effort to care for these patients.

Another critical key to the success of this program is patient education. The plans have an ongoing responsibility to their membership to educate them to the concepts of managed care and of a primary care provider. This work does not end once the patient has signed the contract. Continued efforts must be made regarding patient responsibility under this new system. The testimony of community health plans that 25% of the patients showing up at the door are in other plans is an indication of the work that we all need to do. We are willing to help the plans to develop educational and incentive programs.

Other specific issues of concern include possible adverse affects of Connecticut Access on graduate medical education as patient care is shifted from our teaching hospitals to private offices. We would like to facilitate discussions with the plans and the medical schools so that we can be sure that our teaching programs are accommodated. Similarly, we are concerned with our neonatal transport system which is both medically successful, efficient, and cost effective. I am pleased that with the assistance of Dr. Reguero both Oxford and Blue Cross Blue Shield are honoring this voluntary system and I hope that the other plans will be asked to do the same. We must encourage cooperation among hospitals and plans so that competition in the market place does not threaten quality medical care.

I would like to end my comments by restating our commitment to working toward a quality Medicaid managed care program that will increase access and encourage appropriate utilization of medical services. We are encouraged by the work that has already been done by the Department of Social Services in making some needed adjustments and by their willingness to work with us. But we need to address the problems evident already, for their resolution will be critical to the success of this program. A delay in program implementation or a "grace period" in enforcing regulations would improve physician participating and thus patient access to needed care.

Thank you for your time and I will be happy to answer any questions.

Dickerman Hollister, Jr., M.D.
President

Setting Limits May Improve Care

ROBERT U. MASSEY, M.D.

INCONTINENCE, or rather not complete continence, was the topic for discussion at a recent long-term care conference. This hardly is the simple, unimportant problem that most of us never heard about in medical school, and rarely as residents. It inflicts its embarrassment on large numbers of the over-65 crowd, most of whom are not confined to nursing homes. The causes, while not legion, are not limited to prostatic hypertrophy or a sagging pelvic floor. Its costs, it was observed, exceed three billion dollars annually, hardly a trivial sum.

In less than an hour I learned, and had no trouble remembering, the half dozen or so causes of over 90% of the cases of incontinence, and was introduced to treatment strategies that a nurse practitioner or primary-care physician could carry out in her office in almost all cases. Only infrequently would the expertise of the urologist be required, and, by employing the techniques that are known, paying attention to the problem, the costs, conservatively, could be cut in half. This may be pedestrian science, little more than "how to" stuff, but it is first-rate clinical medicine.

I thought as I drove home from the meeting how a similar tale might be told about many things we do in medicine. But so what? Never, not even with clinical guidelines promulgated all over the place, could we, by taking thought, change the culture of medicine that has dominated the final third of the 20th century, a technologically driven culture in which we all, medical schools, hospitals, insurance companies, drug houses, have come to feel at home. And we resist, with excellent reason, third-party payer bureaucrats and their hirelings who try to tell us what we can't do, especially when we know that much of the money saved by their one-size-fits-all decisions goes to unbelievable rewards for their brilliant CEOs, in one instance something like 40 million dollars! The rest goes to stockholders who can hardly be blamed for recognizing a gold mine when they see one.

Health care, or its costs, we all know, must be limited somehow, either by rationing, which is unpalatable but may be fair if done right, or by regulation, which breeds hostility and can be gamed, even by the good with good conscience. Throwing sand in the wheels of most bureaucracies sometimes may even be construed a meritorious act.

But one sure way to limit any activity is to limit the money available to it. Military personnel and materiel rise and fall with the budget voted for their support. Government slims down or bloats depending on the taxes it can squeeze from an unwilling citizenry. We know from history that the inflation rate of medical care costs tripled in the year after Medicare was introduced in 1965. Even though Medicare provides inadequate coverage in most instances, if its budget increases 10% each year the total health-care money supply will rise with it. Trimming Medicare's growth rate to the rate of inflation plus 1.2% (the annual increase in the population of Medicare eligibles) just might have the effect of limiting the growth of available money for the entire system. If health insurer and HMO premium increases were held to the rate of inflation plus the rate of population growth, health-care costs would, for the most part, be reined in. Wealthy individuals who could buy liposuction to their hearts' content should not be hindered from doing so. But publicly financed health care,

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private insurance, Medicare, and Medicaid, and a few others, should have limits applied roughly equivalent to the limits on everything else, that is, to the rate of inflation.

Physicians, hospitals, and all the rest of the medical care establishment would come to accommodate to budget limits, by whatever means they would themselves define. There are among us those who are smart enough to figure out how to do this without treading on basic freedoms and spreading on another layer of paper-pushers.

But the real advantage, quite apart from keeping health care from overwhelming the national economy and destroying our advantage in a global marketplace, would be, I believe an improvement in medical care. We could stand up to technology that we do not need, to treatments that cost more than they are worth, to unnecessary drugs, to duplicated and triplicated services, to training more specialists and educating more physicians than are healthy for us, and to money wasted on bureaucracies that contribute nothing to health care. Downsizing is all the rage now, but downsizing with the aim of doing it all better would be an invigorating goal. Like helping, or maybe curing, most cases of incontinence for half the price!

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

This Month's Reading in Review

TIMOTHY B. NORBECK

Marking the first attempt to block capitation arrangements on the ground that they violate the Employee Retirement Income Security Act of 1974 (ERISA), a woman has filed a lawsuit in federal court to "stop her health plan from adopting new arrangements to pay some doctors a flat fee for each patient rather than a fee based on the services they provide...." The capitation agreement forced her physician to leave the plan.

Her lawyer said that ERISA requires that the insurers act "solely in the interests of the participants and beneficiaries...." The flat-fee arrangements, he declared "are in the interest of the insurer, not the participants and beneficiaries...." Both sides are waiting for a hearing on whether that case should be dismissed, as the insurer has proposed.

New York Times (20 December 1995)

A year-long study conducted by the New York City Public Advocate Mark Green found that the "quality and generosity" of the city's dozen leading HMOs ... vary widely and that company representatives frequently give "wrong information over the telephone...." According to the report, "the booming HMO industry has cut back on patient care while salaries and perks for its executives soar into the stratosphere...." Green said, "Our diagnosis is that HMOs are often running a fever because too often they ration health care by sacrificing quality for profits."

New York Times (15 January 1996)
New York Daily News (15 January 1996)

"Using gag rules, insurers wanted to keep doctors from saying 'things to patients that got (patients) concerned about things they could not control.' In other words, don't worry your pretty little head about medical choices you don't have any say over in the first place.... That's worse than paternalistic; it's anticonsumer.... Conscientious HMOs shouldn't have to worry about carping doctors or well-informed patients.... And unscrupulous HMOs shouldn't be able to hide behind overly broad gag rules.... These rules are a sure route to poorer care."

USA Today (26 December 1995)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

"More strokes occur on Mondays than any other day of the week.... The most common time is between 8 a.m. and noon....Working men—but not working women or retired men or women—are more likely to have a Monday stroke.... Sunday is the least likely day for a stroke.

Bottom Line (15 January 1996) reporting on an article published in *Stroke.*

According to records released on the autopsy of serial killer Jeffrey Dahmer, officials kept Dahmer's body shackled at the feet during the entire procedure, "such was the fear of this man," said the pathologist Robert Huntington.

Milwaukee Journal (24 December 1995)

Eight Connecticut legislators became ill with diarrhea and stomach cramps at a reception sponsored by lobbyists for the Connecticut Food Association.

New Haven Register (24 December 1995)

"When Social Security was founded, life expectancy was actually three years less—62 years—than the age of eligibility for full benefits.... Since then, the lifespan has lengthened to more than 76 years.... If the relationship between life expectancy and retirement age were the same now as in 1935, retirement would be set at almost 80!.... Where in 1940 an American could expect to spend 7% of adult life in retirement, today that figure is 26% and still rising.... The average married worker who retired in 1995 would discover that he is eventually paid a whopping $182,000 more than he contributed.

Jessica Mathews, a senior fellow at the Council on Foreign Relations in *The Washington Post* (7 January 1996)

"We've been criticized for being disloyal to our party. My response is: Look into the eyes of your children. Do they not deserve a loyalty beyond party?"

Former U.S. Senator Paul Tsongas, in arguing for a balanced budget. *U.S. News & World Report* (8 January 1996)

Only in America: "Everybody cheats. That's the way the world works."

What a former Chicago high school student claims her teacher told her class as he gave them answer keys for a national academic testing competition. The teacher subsequently resigned. *Newsweek* (10 April 1995)

NATIONAL HIV TELEPHONE CONSULTATION SERVICE FOR HEALTH CARE PROVIDERS

1-800-933-3413

The HRSA/AIDS ETC National HIV Telephone Consultation Service ("Warmline"), located at San Francisco General Hospital, provides free clinical information and support to health care providers caring for HIV infected patients.

SERVICES

Warmline services include case consultation, drug information, infection control, and HIV prevention information. Referrals are made to local HIV/AIDS information and education resources through the nationwide network of regional AIDS Education and Training Centers.

STAFFING

The Warmline is staffed by physicians, clinical pharmacists, and other health care professionals expert in the clinical care of symptomatic and asymptomatic HIV disease.

WHEN TO CALL

Warmline faculty are available Monday through Friday, 7:30 am to 5 pm (Pacific Standard Time). Twenty-four hour voice messaging is available at other times.

Funded by the Health Resources and Services Administration, and the American Academy of Family Physicians.

Testimony of the Connecticut State Medical Society to the Public Health Committee and Insurance Committee

An Act Requiring Insurance Coverage For a Minimum Amount of Post-delivery Care for Mothers and Newborns

DICKERMAN HOLLISTER, JR., M.D., President

16 January 1996

GOOD Morning. My name is Dickerman Hollister, Jr., and I am here today to speak on behalf of the Connecticut State Medical Society in support of An Act Requiring Insurance Coverage for a Minimum Amount of Post-delivery Care for Mothers and Newborns. This act would protect mothers and newborns by requiring health plans offering maternity benefits to provide coverage for a minimum hospital stay.

Connecticut physicians are very concerned about the trend among insurers toward limiting coverage of hospital stays for mothers and newborns following delivery. This is an issue of concern to all physicians because we believe that managed care organizations should not override the clinical decision-making of physicians, least of all in the discharge plans for a new mother and her newborn. Unfortunately, this is not the only area where managed care companies are supplanting the medical judgments of physicians. More and more, HMOs and other managed care entities are pressing physicians to discharge patients far earlier than they ever would have before. With few exceptions, these decisions are based on considerations of cost rather then medical care.

Many managed care organizations and insurance companies have adopted 24-hour or less postpartum stays as a routine practice, without any adequate scientific medical data indicating that it is safe to do so. We are in agreement with the policy of the American Medical Association that in the absence of definitive empirical data, perinatal discharge of mothers and infants should be determined by the clinical judgment of the physician in consultation with the patient and not by economic considerations of the insurance company.

By supporting this bill we are not advocating legislative intervention into a physician's clinical decision-making. Making laws in Hartford is not the ideal way to guide medical practice. But the realities of managed care require us to seek from legislators safeguards for patients. It is physicians' duty to protect mother and infants and we need your help. Neither doctor nor lawmaker can abdicate these responsibilities to organizations whose motives are primarily financial.

In cases of an uncomplicated birth, where the mother's desire is to go home, the physician agrees it is safe, and appropriate follow-up care is provided, the patient can be discharged early. However, if this is not the case, the coverage should be available to accommodate the appropriate length of stay for each individual mother and newborn. This legislation we are supporting does not mandate a length of stay, but it mandates that the coverage be available.

Managed care companies will tell you that it is the physicians, not the companies, who decide to discharge patients early. But what they won't tell you is that many of their practice guidelines direct doctors to discharge new mothers within 24 hours or less. Some companies actually retaliate against physicians who keep patients in the hospital beyond the 24-hour threshold by taking disciplinary action or dropping them from participating in the plan altogether, a practice known as deselection. In many cases, the physician is given no explanation for the decision or avenue of appeal. This is why we strongly support section (e) of this Act which provides protections for the physician who appropriately orders a hospital stay consistent with the provisions of this act.

It also is important that patients be made aware of the availability of this coverage and that is why we strongly support section (f) which requires this disclosure.

In addition to myself, physicians from the Connecticut Section of the American College of Obstetricians and Gynecologists, the Connecticut Chapter of the American Academy of Pediatrics, and Connecticut Chapter of the American Academy of Family Practice will be testifying today. I hope that you will take advantage of my colleagues who are specialists in the fields of medicine we are discussing today to ask any of the relevant medical questions dealing specifically with treatment and discharge decisions.

Thank you, and I will be glad to answer any questions.

BOOK REVIEWS

The Foundations of Bioethics, 2nd ed.
H. Tristram Engelhardt, Jr., xiv, 446 pp.,
New York: Oxford University Press; 1996
Price: $39.95. ISBN 0-19-505736-8

Before my students and I get very far into a discussion of bioethics, someone raises the question, not always in these words, "Whose ethics are we talking about and where did they come from?" And another, apparently uncomfortable with the conversation's drift, fearing that an attempt to indoctrinate her is at hand, wonders aloud whether we don't all have different "values," and recalls that someone once said that in ethics there are no right answers anyway. The third voice, usually an administrative type, says impatiently that all this intellectual stuff is fine, but let's get down to cases. Someone then reads the case for discussion, or makes one up, for example, and immediately the group turns into a crowd of amateur lawyers, forgetting the difference between the law, which they know only by hearsay, and ethics which no one is prepared to define anyway. This is all as it should be; in a culture and age that lacks a common understanding of right and wrong, good and evil, beautiful and ugly, most of us are surrounded by friendly moral strangers and we have to search for common ground. In *The Foundations of Bioethics* Engelhardt has provided his readers with what is an historical account with copious chapter endnotes of how we arrived at the threshold of the third millenium as perplexed as we are, and has offered a barely satisfactory way, but the best there is, to find our way to a scheme of ethical behavior for a peaceable community made up largely of ethical strangers.

This second edition does not depart far from the first, published 10 years ago, but in it the author has moved farther along his own way; more importantly, he has made refreshingly explicit his own position:

> Here the reader deserves to know that I indeed experience and acknowledge the immense cleft between what secular philosophical reasoning can provide and what I know in the fullness of my own narrative to be true. I indeed affirm the canonical, concrete moral narrative, but realize it cannot be given by reason, only by grace. I am, after all, a born-again Texas Orthodox Catholic, a convert by choice and conviction, through grace and in repentance for sins innumerable (including a first edition upon which much improvement was needed).

Foundations is a book authored by one of the western world's founding bioethicists, a physician who knows medicine from the inside and a philosopher who knows that discipline in both its historical and practical dimensions. It deserves careful study with long pauses for reflection; it compels the reader to reexamine his own positions, and their foundations. Not many who read it will take comfort in the author's conclusions, and not a few will be irritated. Although I read it page by page, from beginning to end, stopping from time to time to compare it with the first edition, and referred to all the notes, I would recommend first reading the Preface and first chapter, Introduction: Bioethics as a Plural Noun, and the final chapter, Reshaping Human Nature: Virtue with Moral Strangers and Responsibility without Moral Content. Their titles, as they should, give clear signs of the burden of *Foundations'* message. The arguments are there; the intellectual excitement comes in seeing how well Engelhardt has made his case: "A canonical, content-full secular morality cannot be discovered," and "Secular morality offers the sparse language of peaceable communication with moral strangers....It is the language that can be spoken in the ruins of the Enlightenment's failure and in the face of the tragedy of fragmented moral commitment" (p. 422).

Even medical students, new to bioethics, whose guiding compass is "in the first place, do the right thing," (virtue ethics?) find little to sustain them in *autonomy, beneficence, nonmaleficence, and justice,* but they learn the chant because they believe that somehow in these summary words must lie "all the law and the prophets." Engelhardt does not depart from this formula; they are the "...secular means for coming to terms with the chaos and diversity of postmodernity. The means are meager and offer no transcendent fulfillment. But they are all that is available in general secular terms" (p. 10).

He has "rebaptized 'the principle of autonomy' with the name 'the principle of permission' to indicate better that what is at stake is not some value possessed by autonomy or liberty, but the recognition that secular moral authority is derived from the permission of those involved in a common undertaking" (p. xi). Whenever I have tried out "permission" rather than "autonomy" on an ethics committee or house officer, there is an almost immediate recognition of the difference, and an expression of preference for "permission."

But Engelhardt argues throughout that attempts to ground ethical decisions on reason, on the four principles of permission, beneficence, nonmaleficence, and justice, or on utilitarian theory, or deontological theory will finally fail. These principles derived from the Enlightenment's "project of securing by reason the substance of Judeo-Christian morality, along with an account of moral authority not by faith, but by sound rational argument" (p.23) have been shown in postmodernity to be vain. All we can do as moral strangers in a pluralist society is to find common ground, agreeing that we cannot act on someone's behalf without her permission, that we should intend to act

for her good, and that we ought not intend or will evil, that we ought to apportion our acts and resources with equity. But except for the first principle of permission (or autonomy?) the others can only be resolved by some sort of agreement on what is meant by good, bad, and fairness. In committees and in seminars, this is where the conversation runs out, and everyone admits that there are no entirely right answers. The most respected, or powerful, member of the group, then declares (appealing, I suppose, to Romans 2:15, the "law written in their hearts") that doing X "just feels right to him," and the others with varying degrees of satisfaction acquiesce that it feels right to them as well. This is the thin, contentless ethics that must guide us in a society of moral strangers whose consciences may have been deconditioned. It, of course, fails in the tough questions like abortion and euthanasia on demand, assisted suicide, surrogate motherhood, and even in such matters as whether universal health care is required by secular ethics, whether health care may be rationed, whether selling organs may not be justified as well as selling babies, and why should not the principle of permission allow for-profit assisted suicide or specialty training in euthanasia. *Foundations* compares and contrasts throughout the themes of the Enlightenment that find ways to discover ethics by reason, and the content-full ethics of the traditional Judeo-Christian faith in a lawgiving Deity. "...when individuals attempt to resolve controversies and do not hear God (or do not hear him clearly) and cannot find sound rational arguments to resolve their moral controversies, they are left with the device of peaceably agreeing how and how far they will collaborate" (p. x).

"We find ourselves alone," he writes. "We are left without ultimate purpose or orientation. We have retreated to our own devices. Deaf to grace, we are left to guide ourselves" (p. 411). This does not mean that moral friends may not band together to assure their own vision of health care, "After all, a Roman Catholic physician in a Roman Catholic hospital may be properly expected to give very particular religious advice regarding issues in bioethics" (p. 414). Nor does it mean that a secular community of moral strangers may not fashion "with consenting others a *particular* moral community (defined in addition by its particular view of the good life)" (p. 137). Permission, which is key, requires mutual respect among those fashioning a secular morality, and can apply only to persons, those beings who are free (ie, not determined), self-conscious, rational, and possess a moral sense. Among such persons there is a process of peaceable discussion for fashioning ethics; these ethical considerations may, by the way, exclude nonpersons: fetuses, the demented, mentally retarded, comatose, and psychotic whose fate comes to rest solely upon whatever definition of beneficence, nonmaleficence, and justice is currently acceptable. History shows that these definitions change over time without doing violence to a content-less secular morality. They also differ between cultures. Toleration rather than prudence is the first of the cardinal *secular* virtues. "Given the clash of conflicting views of the good life, each must have an established disposition to let other persons develop peaceably their own views of the good life, no matter how evil and depraved..." (p. 419).

As we face a new century some of us may sense that we are approaching ever nearer the abyss. Looking about us we see little that would suggest an impending moral renewal; to be sure there is increased talk of virtues, as there are more books about angels, but the drift seems unstoppable. It has been only 50 years since we found how to release the force holding the atomic nucleus together; in a few years we will have mapped the human genome. Sometime in the 21st century we may be able to eliminate the gene or genes responsible for aging, or even death. We may even, like our competitors the microorganisms, make ourselves into a brand new species.

> We must be responsible to ourselves and in our own terms because we will not accept an independent, content-full claim on us by God and *cannot find one in reason* (italics mine). We cannot recognize even a content to our responsibility to ourselves. We are left facing the responsibility of redesigning ourselves without substantive virtues to guide us. We have no canonical, content-full, normative vision of human nature and its meaning. Having become the measure of ourselves, we have no authoritative, content-full measuring rod to guide us.
>
> As a consequence, the possibilities are endless (p. 413).

Engelhardt concludes, not quite hopelessly for society, that "... because of the ever-available moral standpoint of consensual association based on permission, we have a morality that allows many moralities to be and have their place. In the ruins, even with moral strangers, we can meet and collaborate with moral authority."

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Forgotten Children of the AIDS Epidemic
Edited by Shelley Geballe, J.D., Janice Gruendel Ph.D., and Warren Andiman, M.D., pp. 283, New Haven, Yale University Press, 1995. IBSN 0-300-062701-0. Paperback.

This book is a comprehensive examination of the situation of children affected by AIDS—those children whose parents and siblings have AIDS. The breadth of approach to this topic is impressive. The authors have provided a multidisciplinary perspective, ranging from the social-

psychological impact of AIDS on children's self concept and world view to the societal impact and implications for public policy. The authors have extensive professional backgrounds in psychiatry, social work, law, medical ethics, public health, and bring experience from clinical treatment, family services, and program development to address these issues. The authors are from New Haven, New York, and Boston, cities which have been hard hit by the AIDS epidemic. The book includes a significant contribution by children and parents, most poignantly in the form of drawings and diaries written by children and interviews with their parents. There is an extensive compendium of resources, including books, articles, videos, national and local organizations, and model programs. Since it was published as a Yale Fastback book, it should ensure the timely release of valuable information to professionals, community programs, and families.

Overall, the books most striking aspect is that the argument's made for children affected by AIDS could be made for almost all children in difficult circumstances in the United States, including those affected by poverty, family disruption, drug addiction, violence, and social disenfranchisement. The editors propose that there are really two epidemics affecting these children, one is AIDS itself, and the other is indifference to their plight. This indifference is attributed to society's ignorance about the disease and how to curb its effect. The authors hope to increase awareness about the plight of these children, assuming that education about their needs will be sufficient motivation for a change in society's response to the problem.

Most of the recommendations for changes in social welfare, child and adolescent health programs, and family supports apply to all children and families in need. One specific example is the philosophy and operation of the Yale Program for Children and Families affected by AIDS. Successful mental health intervention was developed through outreach, overcoming mistrust, and assisting families to meet needs such as diapers, formula, clothing, and rent support. Provision of mental health services begins with the clinician taking the first steps toward the patient and parent, in contrast to the traditional mental health approach in which the patient must first demonstrate motivation and commitment. This is certainly a lesson that has other applications to health and social services provided to inner city populations. It is precisely because AIDS cannot be dealt with outside of larger life contexts that it requires this broad approach giving it a relevance far beyond disease alone. While the authors acknowledge this, they urge AIDS related services as a priority. This is justified by the unique social aspects of AIDS and the fact that AIDS is now the leading cause of death among young adults, ages 25-44 who are most likely to be parents of young children and adolescents.

Another striking contrast is the scope of the problem of AIDS-affected children in the United States, who may reach numbers as high as 125,000 by 2000, numbers dwarfed by the worldwide disease. In Uganda alone the number of AIDS-affected children will be between 330,000 and 700,000 by the year 2000. I am sure that any Ugandan health professional reviewing the list of resources available in the United States would be awed by the magnitude.

I wish I could believe that reducing ignorance about the plight of children would increase public and government support of programs to assist these and their families. I could not help noting the irony that the authors' recommendations for a relatively small number of children come at a time when our social welfare programs are being slashed, and concern for collective societal responsibility for those in need seems to be almost nonexistent. Aside from this, *Forgotten Children of the AIDS Epidemic* is an invaluable resource for those working with AIDS and children affected by this disease as well as for teachers and professionals in social work, medicine, public health, child development, and social policy. All proceeds from the sale of this book will be donated to the Stewart B. McKinney Foundation for the benefit of children affected by AIDS.

Judy Lewis, M.Phil.
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Farmington

In Memoriam

AMARANT, LEO, Medizinische Fakultät der Universität Wien, Austria, 1932. Dr. Amarant practiced medicine in the Bridgeport area for 50 years and served on the staff of Bridgeport Hospital, St. Vincent's Hospital, and Park City Hospital. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Amarant died 5 November 1995 at the age of 87.

ARCHAMBAULT, HENRY A., Tufts University School of Medicine, 1927. Dr. Archambault served the Taftville and Norwich area for 46 years as a local surgeon and general practitioner. He served as chief of medicine, chief of surgery, and president of the medical staff of the William W. Backus Hospital. For three years, following his retirement in 1977, Dr. Archambault worked in Willimantic for the Professional Service Review Organization. Dr. Archambault was a member of the New London County Medical Association where he served as president in 1948, the Connecticut State Medical Society where he served on the Council for six years, and the American Medical Association. Dr. Archambault died 20 October 1995 at the age of 90.

BENKOVICH, GEZA O., Orvosi Fakultas Tudomanyegyetem, Budapest, Hungary, 1930. Dr. Benkovich served as an orthopaedic surgeon at the Veteran's Home and Hospital in Rocky Hill for nearly 20 years. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Benkovich died 4 November 1995 at the age of 89.

BERWICK, PHILIP, New York University School of Medicine, 1938. Dr. Berwick maintained a family practice in East Haddam from 1946 until his retirement in 1984. He served as the East Haddam public health officer for many years and as assistant town medical examiner and school doctor. Dr. Berwick served on the staff of Middlesex Memorial Hospital throughout his clinical career and was the physician for the Chesthelm Convalescent Home. He was a member of the Middlesex County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Berwick died 6 November 1995 at the age of 84.

BOBROW, AARON, Medizinische Fakultät der Universität Bern, Switzerland, 1936. Dr. Bobrow maintained a general medical practice in Hartford, later becoming chief of anesthesia at Mount Sinai Hospital. Following his retirement from Mount Sinai, Dr. Bobrow continued to practice and instruct at the University of Connecticut School of Medicine where he helped establish the anesthesia department. Dr. Bobrow was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Bobrow died 8 December 1995 at the age of 86.

CHAIT, SIDNEY A., University of Nebraska College of Medicine, 1940. Dr. Chait specialized in anesthesiology and was associated with Charlotte Hungerford Hospital and Winsted Memorial Hospital. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Chait died November 1995 at the age of 79.

CONNOLLY, ARTHUR J., Georgetown University School of Medicine, 1928. Dr. Connolly maintained a private practice in New Haven specializing in obstetrics and gynecology until his retirement in 1982. He was president of the medical staff of Hospital of St. Raphael's in 1966 and was an assistant clinical professor of obstetrics and gynecology at Yale University School of Medicine. Dr. Connolly was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Connolly died 8 November 1995 at the age of 92.

CULLEN, JAMES R., Georgetown University School of Medicine, 1936. Dr. Cullen served for more than 54 years as a surgeon at St. Francis Hospital and Medical Center in Hartford and Johnson Memorial Hospital in Stafford Springs and as President of the Medical Staff from 1978 to 1982. Dr. Cullen was a surgical consultant for the state and for The Institute of Living. He was a founding member of the Connecticut Society of American Board Surgeons and of the St. Francis Hospital Foundation. He was a member and former president of the Hartford County Medical Association, the Connecticut State Medical Society where he served on numerous committee's during the 1960s and 1970s, and as president from 1965 to 1966, and the American Medical Association. Dr. Cullen died 5 December 1995 at the age of 89.

FOX, GEORGE G., Harvard Medical School, 1934. Dr. Fox maintained an orthopaedic surgery practice in Meriden from 1939 until his retirement in 1976. He also served as chief of surgery and chief of orthopaedics at the Meriden-Wallingford Hospital and as attending orthopaedic surgeon at Veterans Memorial Hospital, Newington Home for Crippled Children, and the Rocky Hill Veterans Hospital. Dr. Fox was also assistant clinical professor of orthopaedic surgery at the Yale University School of Medicine. Past president for the State Society of Orthopaedic Surgery, Dr. Fox was a member of the New Haven

County Medical Association where he served as vice president and as a delegate to the Connecticut State Medical Society and the American Medical Association. Dr. Fox died 21 December 1995 at the age of 86.

HURWITZ, SIDNEY, State University of New York College of Medicine, 1949. Dr. Hurwitz, a clinical professor of pediatrics and dermatology at Yale University School of Medicine, maintained a private practice in pediatrics from 1954 to 1968, and, since 1971, a private practice in pediatric dermatology. He was one of the original founders of the American and International Societies for Pediatric Dermatology and served as president of the International Congress of Pediatric Dermatology. Active in the section on dermatology for the American Academy of Pediatrics and numerous other organizations relating to pediatric dermatology, Dr. Hurwitz was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Hurwitz died 13 November 1995 at the age of 67.

JENNES, MILTON L., Tufts University School of Medicine, 1938. Dr. Jennes specialized in otolaryngology and facial plastic surgery in the Waterbury area. He was a member of the New Haven County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1963 to 1965 and from 1975 to 1979, the Connecticut State Medical Society, and the American Medical Association. Dr. Jennes died 3 October 1995 at the age of 83.

McGOWAN, THORBURN S., University of Tennessee College of Medicine, 1932. Dr. McGowan was former chief of surgery at the Coast Guard Academy. From 1965 to 1979 he was the chief of athletic medicine and assistant professor of orthopaedics at the University of Connecticut. Dr. McGowan was a member of the Windham County Medical Association and the Connecticut State Medical Society. Dr. McGowan died 14 November 1995 at the age of 88.

MINOR, JAMES V., Georgetown University School of Medicine, 1946. Dr. Minor, a pediatrician, was the director of pediatric education at Norwalk Hospital from 1959 to 1961, chief of the hospital's pediatric department from 1961 to 1965, and assistant chief of staff for the hospital from 1965 to 1969. He was an attending pediatrician at both Norwalk Hospital and Yale-New Haven Hospital from 1952 to 1983. Past President of the Connecticut Chapter of the American Academy of Pediatrics, Dr. Minor was a member of the Fairfield County Medical Association, the Connecticut State Medical Society where he had served on the Editorial Board of *Connecticut Medicine*, and the American Medical Association. Dr. Minor died 19 December 1995 at the age of 77.

MIRABILE, CHARLES S., SR., McGill University Faculty of Medicine, Montreal, 1930. Dr. Mirabile was a urological surgeon at Hartford Hospital. He was chief of urology for many years and served as chief of staff. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Mirabile died 6 December 1995 at the age of 91.

MORGAN, KENNETH R., Yale University School of Medicine, 1942. Dr. Morgan specialized in obstetrics and gynecology in Fairfield County and was associated with both Bridgeport Hospital and St. Vincent's Hospital. A member of many local and national organizations relating to obstetrics, gynecology, and abdominal surgery, he was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Morgan died 11 December 1995 at the age of 79.

NOBLE, ROBERT P., Columbia University College of Physicians and Surgeons, 1940. Dr. Noble practiced medicine in Litchfield county since 1946 and was one of the founders of Sharon Clinic. He also founded the Sharon Research Institute established to investigate the biochemistry of heart disease. Dr. Noble was an associate clinical professor at Columbia Presbyterian Hospital in New York City for many years. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society, where he served on the Editorial Committee from 1964 to 1967, and the American Medical Association. Dr. Noble died 1 November 1995 at the age of 82.

ONORATO, DOUGLAS J., University of Connecticut School of Medicine, 1986. Dr. Onorato was in private practice in Hartford, Glastonbury, and Colchester and was in private practice with Physicians and Pulmonary Medical Group in Miami, Florida. He was doing research and development at Jackson Memorial Hospital in Florida. Dr. Onorato was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Onorato died 13 January 1996 at the age of 37.

PIKE, MAURICE M., Harvard Medical School, 1925. Dr. Pike began his orthopaedics practice in Hartford in 1929 and was associated with Hartford Hospital and Newington Children's Hospital where he served as chief of orthopaedic surgery from 1940 to 1963. He was a consultant in orthopaedics to many hospitals in the Hartford area, and for several years, chief of orthopaedics at Newington Veteran's Administration Hospital. Dr. Pike was an Associate Clinical Professor of Orthopaedic Surgery at Yale University School of Medicine and worked as a clinical associate for the University of Connecticut at the former McCook University Hospital in Hartford. He was a member of the Hartford County Medical Association where he had served as a delegate to the Connecticut State

Medical Society, the Connecticut State Medical Society where he served on the Committee on Medical Care for Veterans during the 1960s, and the American Medical Association. Dr. Pike died November 1995 at the age of 95.

TJIMIS, PAVLOS D., Faculty of Medicine, University of Athens, Greece, 1958. Dr. Tjimis maintained a private practice in Hamden specializing in internal medicine and cardiovascular diseases and was an attending physician at the Hospital of St. Raphael. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Tjimis died 20 November 1995 at the age of 62.

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Connecticut Medicine

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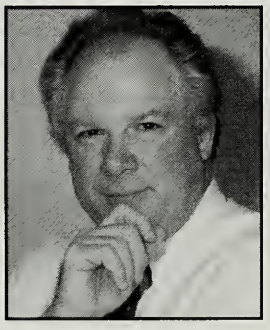

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Birth-Weight Percentiles by Gestational Age, Connecticut 1988-1993

CHRISTINE ROBERTS, M.B.B.S, LLOYD MUELLER, PH.D., AND JAMES HADLER, M.D.

Abstract—Extreme birth weights are associated with increased infant mortality and morbidity. Identifying infants of extreme birth weight is important for both clinical assessment and public health research. This study aimed to produce charts of birth-weight percentiles by gestational age for male and female, black and white infants in Connecticut. Data were obtained from registrations of live births to Connecticut residents in Connecticut, 1988-1993. During this period 263,032 births were registered to black and white women. Birth weight was missing in only 90 records but gestational age was missing in 29,865 (11%) records. An additional 0.5% of births were excluded because the recorded birth weight was an extreme outlier for the recorded gestational age. Birth records with missing gestational age had lower mean birth weights and proportionately more births ≤1500 g when compared to birth records where gestation was reported; however the magnitude of the differences was small. Our charts provide population-based birth-weight percentiles by gestational age based on the most recent Connecticut birth data available. They are the most appropriate population norms available for Connecticut clinicians and researchers.

CHRISTINE ROBERTS, M.B.B.S, Currently; National Centre for Epidemiology and Population Health, The Australian National University, Canberra, Australia; Formerly: Epidemic Intelligence Service, Division of Field Epidemiology, Centers for Disease Control and Prevention, Atlanta, Ga., and Connecticut Department of Public Health, Hartford. LLOYD MUELLER, PH.D., Connecticut Department of Public Health, Hartford. JAMES HADLER, M.D., Connecticut Department of Public Health, Hartford.

BIRTH weight is one of the strongest indicators of perinatal mortality and morbidity risk.[1,2] However, classifying infants by birth weight alone leads to confounding by growth status (size for age) and maturity (gestational age).[3,4] Charts of birth-weight percentiles by gestational age represent the distribution of birth weights within the population. Such charts have two main applications. First they can be used by clinicians to determine high-risk infants who are likely to need special care. Second they are used in epidemiologic studies to define small for gestational age (SGA) and large for gestational age (LGA) births so that risk factors for such births can be identified. Because percentile charts represent cross-sectional measurement of birth weight at birth, they do not necessarily represent intrauterine growth standards.[2,5]

The most frequently cited birth-weight percentile charts are the first published charts of Lubchenco.[6] These charts were based on births in a Denver, Colorado, hospital 1948-1961 and are no longer valid.[5,7,8] These charts reflect the demographic make-up of Colorado in the 1950s, a population that did not include African-Americans. Further, birth weights tend to be lower at higher altitudes, such as Denver.[6] In the United States, birth weight has also generally increased over time.[7] Thus, percentile charts that are specific to a population and that are updated at regular intervals are the most valid.[5,7,8] Our aim was to produce charts of birth-weight percentiles by gestational age for male and female, black and white infants in Connecticut.

Methods

We analyzed data on singleton live infants born in Connecticut to Connecticut residents from 1988 through 1993. The data were obtained from computerized birth files from the Connecticut Department of Public Health is

Table 1.—Maternal demographic characteristics of births included and excluded from analysis, Connecticut, 1988-93

	Analyzed data n=231,706 (%)	*Missing data n=29,984 (%)*	*Extreme gestational age n=165 (%)*	*Birth weight outliers n=1,177 (%)*
Race				
White	87.2	83.5	83.6	84.5
Black	12.8	16.5	16.4	15.5
Maternal age				
<20 years	8.1	9.5	17.0	8.2
≥20 years	91.9	90.4	83.0	91.8
Marital status				
Married	73.5	68.0	65.5	73.4
Unmarried	26.3	31.6	34.0	26.4
Education				
Elementary	2.0	1.2	1.8	2.2
High school	41.7	28.6	46.7	43.2
College +	48.6	26.9	32.1	45.4
Unknown	7.7	43.2	19.4	9.3
Residence in town				
<100,000 population	23.8	33.5	23.1	26.4
≥100,000 population	76.3	66.5	76.9	73.6

vital statistics registration of live births. Births were stratified by infant sex and by maternal race (black or white). These strata were selected because otherwise comparable infants have different risks for morbidity or mortality depending on their sex and/or race.[2,3,9,10] Other racial groups represented only 2.2% of live births in this time period (Asian/Pacific Islander 1.96%, Native American 0.2%, other 0.1%) and maternal race was unknown in 2.4% of records. Hispanic ethnicity was reported separately from racial group, so Hispanic mothers may be black or white.

Gestational age was reported in completed weeks of gestation, and birth weight was reported in grams. Gestational age was calculated from the first day of the last menstrual period (LMP), or if this information was missing, from the clinical estimate of gestation. Gestational age was missing in 11% of the birth records. We were concerned that these births may be more likely to be low birth weight and presumably premature births, thus, we compared them on a number of features to birth for which the information was complete.

For births for which gestational age was recorded, some combinations of gestational age and birth weight were found to be unlikely. This occurred more often at earlier gestational ages for which some high birth weights were recorded. We identified extreme outlying birth weights/gestational age combinations at each gestational age (20 to 44 weeks) by using a method described previously.[5,11] For birth weights outside the interquartile range, we determined a value that was a function of the interquartile range. The further the birth weight from the interquartile range for each gestational age, the greater this value. We then examined these values and excluded birth weights where the value exceeded 2.0. This cut point was selected

Table 2.—Comparison of birth weights among infant sex and maternal race categories before and after removal of birth-weight outliers, 20 to 44 weeks, Connecticut, 1988-93

	Before removal of outliers		*After removal of outliers*	
	No. of live births	*Birth weight (g) Mean ±SD*	*No. of live births*	*Birth weight (g) Mean ±SD*
White males	104.201	3,492 ±575	103,559	3,488 ± 563
White females	98,965	3,365 ± 541	98,543	3,364 ±532
Black males	15,100	3,189 ± 657	14,998	3,187 ± 645
Black females	14,703	3,078 ±630	14,606	3,080 ± 619

Table 3.—Frequency of births among maternal race/infant sex categories, by gestational age, Connecticut, 1988-93

Gestation (weeks)	*White Males*	*White Females*	*Black Males*	*Black Females*
20	22	19	13	9
21	41	26	16	13
22	31	26	27	31
23	49	43	33	30
24	45	53	37	23
25	61	36	27	29
26	71	54	37	36
27	80	55	37	28
28	102	71	50	45
29	121	89	42	41
30	130	111	71	60
31	143	181	61	64
32	301	255	117	108
33	351	301	119	125
34	708	565	189	192
35	1,172	967	287	299
36	2,671	2,252	634	665
37	5,225	4,473	1,133	1,026
38	12,546	11,532	2,203	2,139
39	20,847	20,025	2,847	2,800
40	38,512	37,640	4,978	4,893
41	14,664	14,533	1,494	1,468
42	5,356	4,936	512	448
43	295	291	34	30
44	15	9	0	4
Total	103,559	98,543	14,998	14,606

because it resulted in exclusion of only 0.4% of all births, while noticeably removing extreme, and probably erroneous, birth-weight/gestational age combinations.

We plotted exact percentiles for each gestational age. We selected a minimum number of births for plotting each percentile: 50 births in an infant sex/maternal race and gestational-age stratum were selected as the cut point for plotting the 10th percentile and 100 births for plotting the 3rd percentile.

Statistical Analysis: All analyses were performed by using the Statistical Analysis Software (SAS) Version 6.08. To examine the distribution of birth weights among births for which gestation was recorded and births for which gestation was not recorded, we compared the mean birth weights (two-sample t test) and the percentage of births ≤1,500 g (χ^2 test).[12] The univariate procedure (proc univariate) was used to examine the birth-weight distributions and to determine the interquartile range for each gestational age. After removing outliers, this procedure was used to determine the exact birth-weight percentile values for each gestational age.

Results

During 1988 through 1993, Connecticut registered 263,032 live births to black and white women. Birth weight was missing in 90 records, gestational age was

Table 4.—Weight percentile values for singleton live births (g), Connecticut
WHITE MALES

Gestation (weeks)	*Percentile*										
	1st	*3rd*	*5th*	*10th*	*25th*	*50th*	*75th*	*90th*	*95th*	*97th*	*99th*
20						314					
21					383	415	454				
22					423	482	539				
23					550	600	652				
24					590	680	730				
25			522	610	709	765	850	920	936		
26			540	720	794	890	980	1050	1110		
27			632	780	893	980	1100	1273	1375		
28		650	765	822	1040	1178	1300	1417	1460	1500	
29		867	964	1040	1180	1332	1474	1637	1730	1810	
30		800	890	1106	1361	1515	1720	1913	2041	2055	
31		1080	1145	1310	1488	1675	1899	2183	2388	2500	
32	1162	1255	1305	1463	1695	1900	2098	2315	2495	2660	2778
34	1150	1310	1503	1680	1899	2150	2353	2543	2658	2835	3085
34	1320	1616	1758	1916	2155	2381	2636	2885	3033	3190	3455
35	1588	1780	1900	2098	2353	2622	2892	3147	3388	3515	3714
36	1814	2013	2155	2353	2580	2840	3120	3430	3600	3714	3941
37	2013	2240	2381	2550	2810	3090	3400	3685	3856	3969	4200
38	2268	2495	2608	2776	3033	3317	3610	3912	4082	4196	4420
39	2481	2693	2800	2948	3203	3487	3780	4054	4250	4355	4564
40	2580	2790	2892	3062	3317	3600	3898	4196	4366	4470	4685
41	2722	2925	3033	3180	3445	3742	4026	4310	4508	4615	4819
42	2807	3005	3118	3260	3520	3827	4139	4423	4621	4734	4989
43	2977	3040	3175	3317	3550	3856	4167	4479	4678	4820	4990
44						3657					

missing in 29,865 (11%) records, and both birth weight and gestational age were missing in 29 records. These 29,984 records were excluded from the calculation of birth-weight percentiles.

To determine whether the birth records with missing gestational age were more likely to be low birth-weight births, we compared the mean birth weights and the proportion of births ≤1,500 g for births for which gestational age was recorded with those for which gestational age was missing. The mean birth weight of those births with missing gestational age was 3,359 g (SD ±625 g) compared with a mean birth weight of 3,391 g (SD ±585 g) for those births with a recorded gestational age. Although the difference was small (32 g), it was statistically significant ($P<.001$) because the samples were large. One percent of the births for which a gestational age was recorded were ≤1,500 g compared with 1.6% of the births with missing gestational age ($\chi^2=79.2$, $P<.001$).

Of the 233,048 birth records for which both birth weight and gestational age were recorded, 165 had extreme gestational ages (ie, <20 weeks or ≥45 weeks) and were excluded from analyses. We examined the distribution of

Table 5.—Weights percentile values for singleton live births (g), Connecticut
WHITE FEMALES

Gestation (weeks)	*Percentile*										
	1st	*3rd*	*5th*	*10th*	*25th*	*50th*	*75th*	*90th*	*95th*	*97th*	*99th*
20						324					
21					330	393	450				
22					340	446	539				
23					500	539	610				
24					575	610	680				
25					663	724	765				
26			635	660	760	850	964	1050	1077		
27			510	652	820	936	1100	1220	1247		
28			610	815	992	1105	1280	1417	1480		
29			815	910	1049	1200	1389	1474	1616		
30		880	910	1070	1275	1474	1600	1758	1843	1900	
31		870	992	1120	1361	1616	1843	2041	2353	2530	
32	1077	1130	1157	1332	1557	1814	2035	2325	2608	2780	2905
33	1077	1225	1418	1580	1814	2041	2242	2495	2665	2822	2977
34	1417	1574	1616	1735	2020	2268	2523	2807	3062	3289	3487
35	1550	1800	1870	2020	2268	2523	2800	3062	3289	3402	3520
36	1745	1956	2072	2240	2490	2738	3010	3310	3544	3657	3955
37	1965	2160	2280	2438	2693	2948	3232	3515	3714	3827	4111
38	2211	2410	2523	2665	2920	3175	3460	3760	3941	4054	4325
39	2410	2604	2693	2835	3075	3345	3629	3895	4082	4196	4422
40	2495	2693	2791	2948	3175	3459	3742	4026	4196	4309	4536
41	2636	2820	2920	3062	3317	3600	3884	4167	4335	4444	4680
42	2722	2877	2977	3118	3374	3657	3941	4245	4410	4508	4734
43	2665	2865	2970	3118	3430	3742	4045	4280	4479	4570	4848
44						3742					

birth weight by gestational age of the remaining 232,883 births. Birth weight was considered an extreme outlier for the recorded gestational age in 1,177 (0.5%) of these births and was excluded from further analysis. For instance, infants with a gestational age ≤30 weeks and birth weight ≥3,000 g were excluded.

To assess the potential for bias among the births that were excluded from analysis, we compared the distribution of maternal sociodemographic variables among the 231,706 births that were included in the analysis, the 29,984 births for which gestational age and/or birth weight were missing, the 165 births with extreme gestational age, and the 1,177 births for which birth weight was considered an outlier (Table 1).

The removal of birth weight outliers had little impact on the mean birth weight within infant sex and maternal race strata (Table 2). Although a slight decrease occurred in the 90th percentile of preterm births, there was little effect on the 10th percentile, median, or interquartile range.

The median birth-weight for each gestational age differed by infant sex and maternal race category

Table 6.—Weight percentile values for singleton live births (g), Connecticut
BLACK MALES

Gestation (weeks)	*Percentile*										
	1st	*3rd*	*5th*	*10th*	*25th*	*50th*	*75th*	*90th*	*95th*	*97th*	*99th*
20						350					
21						423					
22					450	490	543				
23					539	595	624				
24					624	673	725				
25					700	790	880				
26					800	900	980				
27					907	1010	1106				
28					1055	1201	1276				
29					1110	1380	1480				
30			1010	1191	1360	1503	1729	1998	2150		
31			1276	1355	1520	1735	1970	2156	2200		
32		1276	1340	1474	1644	1843	2041	2350	2552	2590	
33		1420	1446	1588	1843	2098	2325	2608	2892	2900	
34		1531	1616	1900	2098	2353	2523	2892	3095	3204	
35	1588	1843	1920	2041	2296	2540	2807	3005	3150	3345	3572
36	1758	2013	2098	2240	2466	2721	2970	3289	3572	3629	3799
37	1969	2126	2268	2381	2650	2940	3232	3487	3671	3770	3983
38	2155	2381	2490	2636	2863	3119	3402	3680	3856	3997	4281
39	2381	2523	2608	2778	3025	3300	3582	3870	4054	4167	4394
40	2410	2600	2693	2850	3118	3401	3686	3980	4167	4309	4550
41	2551	2750	2863	3010	3230	3540	3830	4105	4309	4437	4615
42	2600	2807	2892	3062	3289	3629	3953	4252	4394	4510	4750
43					3402	3700	3990				
44											

(Fig. 1). The difference was most pronounced for term births, where black female infants had the lowest, and white male infants the highest, median birth weight. The number of births within each infant sex and maternal race category by gestational age is shown in Table 3.

Figs. 2-5 show birth-weight percentiles for gestational ages of 26 to 43 weeks for male and female, white and black infants. The exact percentile values for these figures are shown in Tables 4-7. Gestations <26 weeks and 44 weeks were not plotted because of the small number of births in these strata (Table 3).

Discussion

Comparing the birth weight of a newborn infant with a birth weight by gestational age chart for the appropriate population is a quick way of identifying SGA infants and possible intrauterine growth retardation (IUGR). Clinicians can use such charts as part of a neonatal assessment to help identify neonates who should receive special evaluation and therapy.[5,8] Factors such as parity, maternal age, height, weight, and previous obstetric experience, which may affect the size of the infant but do not necessarily increase the risk of an adverse outcome, should also be considered.[2,5] The percentile used to help identify infants

Table 7.—Weight percentile values for singleton live births (g), Connecticut
BLACK FEMALES

Gestation (weeks)	*Percentile*										
	1st	*3rd*	*5th*	*10th*	*25th*	*50th*	*75th*	*90th*	*95th*	*97th*	*99th*
20						330					
21						410					
22					405	450	482				
23					480	550	585				
24					555	620	655				
25					624	737	820				
26					709	787	904				
27					879	936	1049				
28					1020	1162	1245				
29					1070	1270	1417				
30			992	1110	1285	1409	1613	1715	1991		
31			950	1219	1410	1587	1815	2098	2658		
32		1134	1191	1389	1580	1793	2012	2330	2693	2729	
33		1300	1370	1450	1758	2000	2250	2503	2750	2863	
34		1576	1665	1775	2007	2204	2410	2750	3130	3245	
35	1600	1705	1810	1900	2130	2370	2640	2920	3062	3203	3402
36	1715	1942	2015	2150	2381	2609	2890	3147	3374	3550	3730
37	1956	2126	2230	2381	2590	2840	3120	3430	3600	3756	3941
38	2098	2270	2381	2523	2755	3005	3289	3600	3799	3912	4225
39	2285	2473	2551	2690	2906	3175	3459	3742	3933	4040	4316
40	2330	2530	2622	2770	3005	3270	3572	3850	4000	4111	4366
41	2495	2665	2750	2892	3144	3402	3689	3997	4196	4309	4564
42	2590	2715	2778	2930	3170	3455	3736	4090	4224	4309	4715
43					3118	3327	3544				
44						3346					

at high risk is likely to vary by gestational age. Patterson found that the birth-weight percentile that predicted poor perinatal outcome declined from the 55th percentile at 28-29 weeks to the 24th percentile at 34 to 35 weeks.[13]

Epidemiologic studies of low birth weight and associated mortality and morbidity require study of the two main etiologic pathways for low birth weight: prematurity and IUGR.[3] Birth- weight charts help identify infants who are SGA or both preterm and SGA. SGA infants are likely to have suffered IUGR and are usually defined by selecting a percentile cut point.[14] The 10th percentile has been most frequently used, such that births below the 10th percentile for each gestational age are considered SGA births.[14] Other percentiles have been used to define SGA.[14,15] Our charts will allow researchers in Connecticut, or areas with similar populations, to use a percentile appropriate to their research question.

Birth registrations from vital statistics data have the advantage of utilizing data from the entire population of a geographic area.[5,7,8] Population-based data provide a more

valid standard than that based on data from single or selected hospitals, or from very different populations. Comparing our charts for white infants with Lubchenco's charts based on births during 1948-1961,[6] we find that the Lubchenco charts markedly underestimate SGA births, especially at term; for white male infants, Lubchenco's 10th percentile falls at or below our 3rd percentile from 38 weeks, and for white females, this trend begins at 34 weeks. These discrepancies are even more pronounced when comparing Lubchenco's charts with information recorded for black infants born in Connecticut. The corollary is that the Lubchenco charts overestimate LGA infants in Connecticut. By comparison, our data for white infants fit more closely with data obtained from Canadian birth-weight percentile charts for singleton births recorded during 1986-88.[5] However, the Canadian charts overestimate SGA for black infants in Connecticut from about 35 weeks for males and from 30 weeks for females. Approximately 9% of the Canadian population was reported to be of ethnic origin: 4% Asian, 3% aboriginal, and 2% other.[5] As the distribution of both birth weights and demographic characteristics vary with time, we recommend that these charts be updated every five to 10 years.[5,16]

At low birth weights and at gestations <38 weeks black infants have better survival relative to white infants and poorer survival at higher birth weights and gestational ages.[3,9,10] We believe these differences in survival warrant separate charts by race. However, other investigators have questioned the appropriateness of separate charts by race.[2] Our charts indicate that birth-weight distributions differ by racial group. From 35 weeks, the median birth weight for male and female white infants is higher than the median birth weight of either male or female black infants. The median birth weight for black female infants falls below the median birth weight for the other three groups at nearly every gestational age.

For any large database, issues of data quality and incomplete records are important.[5,17] In any assessment of birth weight by gestational age, these two factors need special attention. Birth weight was missing or considered outlying in only 0.5% of the records in this study. Removing outlying birth weights is important because they are likely to result from incorrectly reported gestational age.[5] The distribution of birth weights among the relatively few preterm births could be skewed toward higher values if even a small percentage of term births were incorrectly recorded as preterm births,

Figure 1.—Median Birth Weight for Gestational Age by Infant Sex/Maternal Race, Connecticut 1988-93.

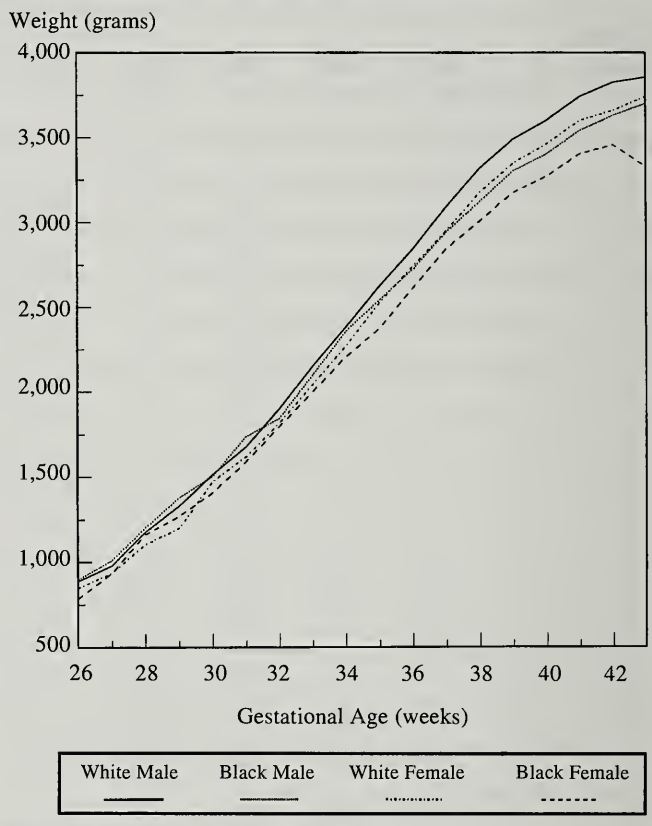
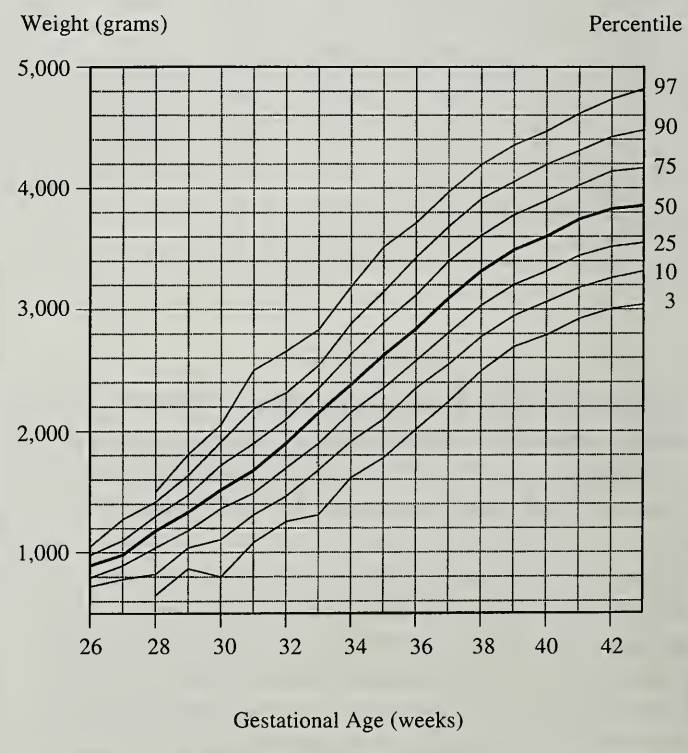


Figure 2.—Birth Weight Percentiles for White Male Singleton Live Births, Connecticut 1988-93.



although this would have relatively less effect on the determination of the 3rd and 10th birth- weight percentiles.

Missing gestational age was the greatest limitation to this study. Gestational age was missing in an average of 11% of records over the six years, declining from 15% in 1988 to 6% in 1993. If the births with missing gestational age were more likely to be low birth weight and presumably premature, this could bias the results for early gestational ages. Although births with missing gestational age had lower mean birth weights and proportionately more births ≤1,500 g when compared with births for which gestation was reported, the magnitude of the differences was small and was not likely to be important. The excess 0.6% of births that were ≤1,500 g and had no recorded gestational age represented only 180 births. This slightly lower birth-weight distribution among the births with missing gestational age is consistent with the increase in factors associated with lower socioeconomic status (more teenage, black, and unmarried mothers) noted among these births.

In conclusion, we present birth-weight percentile charts by gestational age, infant sex, and maternal race for Connecticut infants. These charts were derived from the most recent Connecticut birth data available. They should be of special interest to clinicians assessing newborns and to researchers studying low birth weight.

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Figure 3.—Birth Weight Percentiles for White Female Singleton Live Births, Connecticut, 1988-93.

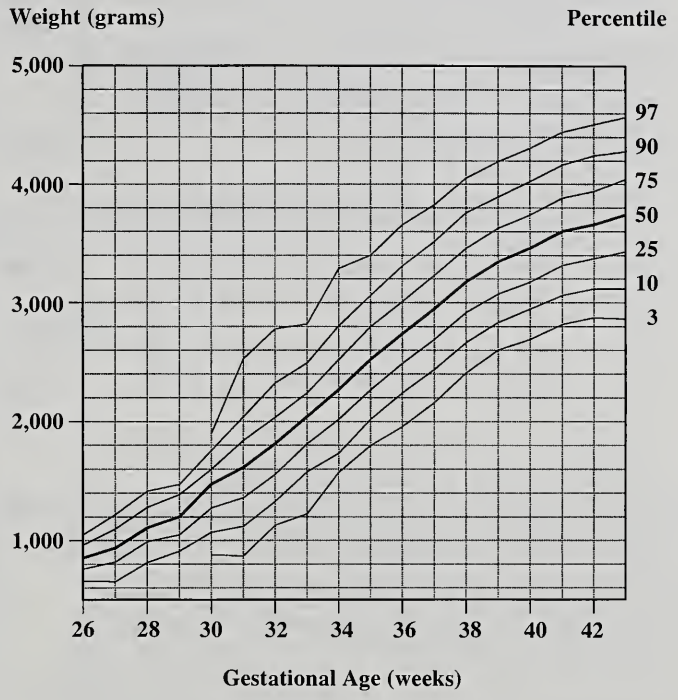

Figure 4.—Birth Weight Percentiles for Black Male Singleton Live Births, Connecticut, 1988-93.

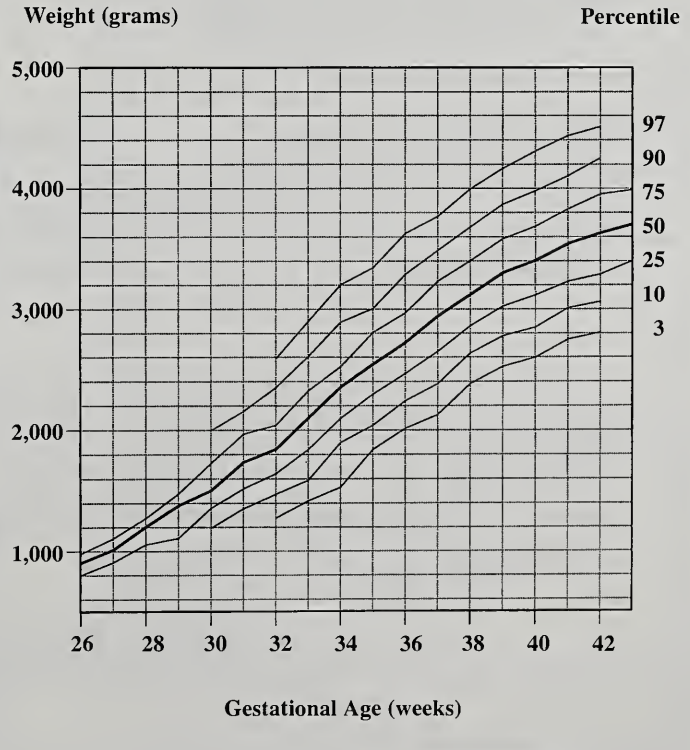

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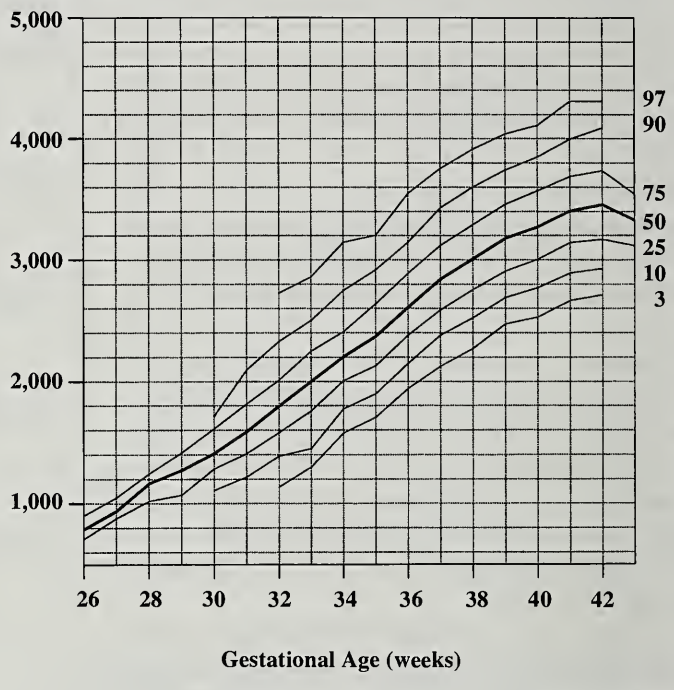
Figure 5.—Birth Weight Percentiles for Black Female Singleton Live Births, Connecticut, 1988-93.



Painless Lumbar Surgery: Morphine Nerve Paste

CHARLES W. NEEDHAM, M.D.

ABSTRACT—The intraoperative application of morphine as a nerve paste to the exposed dura and nerve roots in lumbar cases provides immediate, dramatic, and long-term relief in postoperative pain. Fifty-four patients with intractable sciatica due to ruptured discs or lumbar stenosis were treated. After decompression of the involved nerve root(s), a paste composed of Avitene®, Depo-medrol®, Amicar®, and Duramorph® is applied to the local epidural space. No catheter is required. The Duramorph does not need to be replenished. The use of the nerve paste reduces hospital stay to a minimum, reduces the stress of surgery, and has not produced undesirable side-effects.

A NEW method of lumbar surgery has been developed which provides immediate patient gratification, virtually complete pain relief after months of intractable sciatica, reduces the stress of surgery and eliminates the need for postoperative narcotics. After lumbar discectomy or laminectomy for ruptured discs or stenosis, most patients can be discharged the following morning. The use of morphine nerve paste in the epidural and disc spaces produces its excellent effect for several weeks postoperatively, but does not replace the need for careful surgical decompression of the nerve roots. If the patients are carefully selected, success rates can be improved from 90% to 98%. The morphine nerve paste can also be successfully employed in patients who have had previous lumbar surgery. Such patients report that the use of the epidural nerve paste dramatically eliminates postoperative pain, when compared with their previous experience.

General anesthesia is employed in all lumbar cases. Twenty milliliters of 0.5% Marcaine® is used subcutaneously just before the incision is made, thereby reducing the stress (catecholamine, etc.) response to the surgical incision. An intraoperative roentgenogram is taken to confirm the lumbar interspace. A single level microdiscectomy incision for a ruptured lumbar disc should not exceed one inch in length. An additional inch is added for each additional lumbar level. Microneurosurgical techniques are employed in all cases.

Following the removal of a ruptured disc and the decompression of the nerve root, including foraminotomy, an epidural nerve paste is applied to the exposed dura and nerve root and disc interspace. Sterile Duramorph® (preservative free morphine sulfate) is mixed with other ingredients to form a thick paste that prevents the too rapid escape of the components from the local epidural space at the lumbar operative site. No catheters are placed in the epidural space, since the Duramorph does not need to be replenished and postoperative analgesia is maintained. The other ingredients in the paste promote hemostasis and reduce inflammation. Good hemostasis and maintenance of the integrity of the dura are equally important. The nerve paste is mixed using the following ingredients:

1) one small package of Avitene®
   (Microfibrillar Collagen Hemostat)
2) 2 mL (80 mg) Depo-medrol®
   (methylprednisolone acetate)
3) 2 mL (500 mg) Amicar® (aminocaproic acid)
4) 2 mL (1 mg) Duramorph®
   (morphine sulfate, preservative-free)

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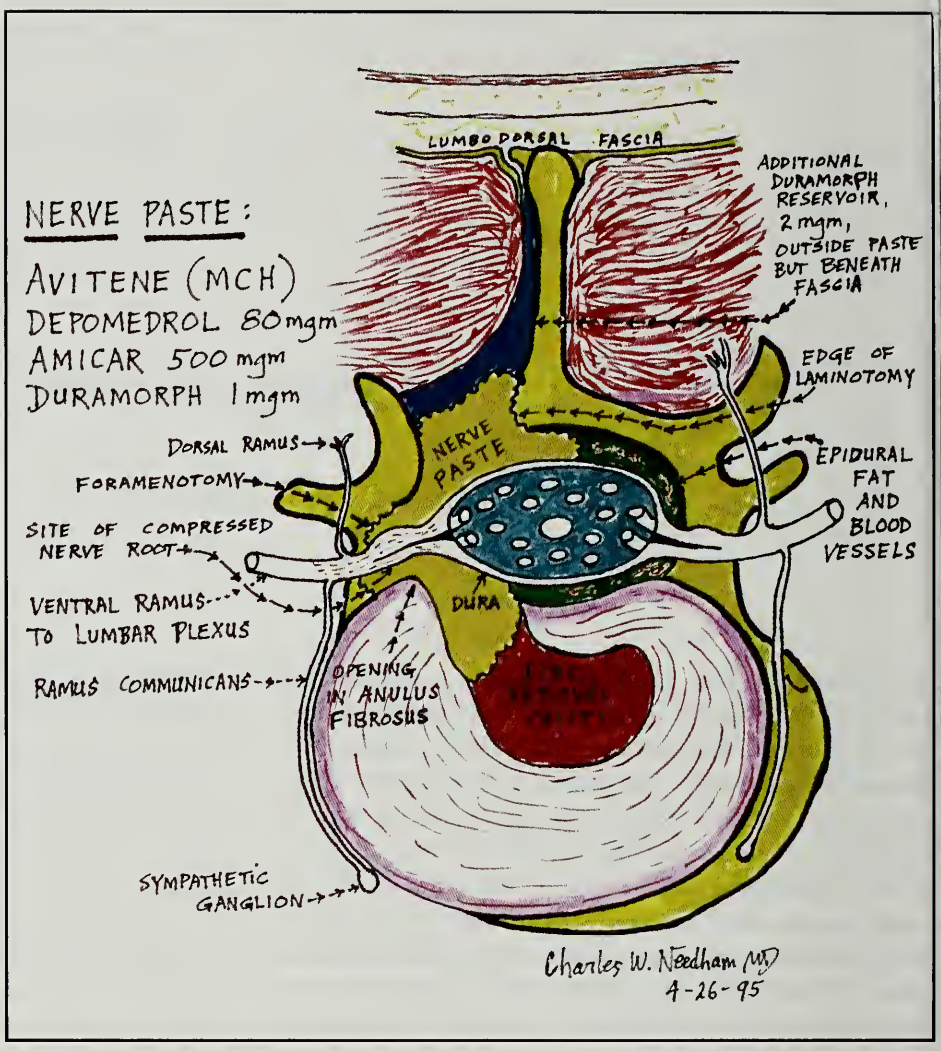
The neurosurgeon observes each step in the mixing of the paste, which is performed just before its application; no Gelfoam® is used. The thick paste is generously applied to the exposed dura, including the emerging nerve root at the foramen (see enclosed diagram). The thick paste should be fluid enough to pass beneath the nerve root, anterior to the dural tube, down to the anulus. The paste also enters the opening in the anulus through which the ruptured disc has been removed. However, the thick paste should not be so fluid as to permit its rapid entry and escape into the blood vessels and lymphatics of the general epidural space. Keeping the nerve paste thick and local is readily accomplished by using the recipe above. Water-tight closure of the lumbodorsal fascia is then carried out with continuous 2-zero Prolene. A reservoir of additional sterile Duramorph (2-4 mg, depending on the length of the incision) is injected outside the paste, but inside the closure of the lumbodorsal fascia. This also tests the watertightness of the closure. This liquid reservoir of Duramorph seeps into the nerve paste with time, and also eliminates muscle spasm. The reservoir of Duramorph also separates the paste from the fascial closure. All patients receive prophylactic antibiotics intravenously, usually oxacillin, prior to the application of the nerve paste.



The nerve paste is used only in lumbar cases. Postoperatively the patients are monitored, but no instances of respiratory depression have been encountered in the 54 cases done thus far. Naloxone hydochloride 0.4 mg intravenously may be used if respiratory rate falls below eight per minute. The Trendelenburg position is avoided. When patients return to the recovery room they are in a head-elevated position at 30 degrees. Elderly patients may be sensitive to small amounts of morphine. No patients complained of pruritis which is common when epidural morphine is employed in the usual way by the anesthesiologist using an epidural catheter, but not when used as a paste. Fifty-four patients were operated on by the author between November 1994 and September 1995. One lumbar infection was encountered. Two patients developed postoperative urinary retention requiring catheterization. No postoperative narcotics were required in 98% of patients. All patients were seen within one week of discharge from the hospital.

Morphine receptors are located in the brain, spinal cord, and other tissues. In the spinal cord these opiate receptors lie in lamina one, two, four, and five of the dorsal horn. If Duramorph alone, not as a paste, is placed in the epidural space, between 2% and 10% of the morphine diffuses across the dura and arachnoid into the cerebrospinal fluid, to bind opiate receptors and produce pain relief.[1] Morphine also influences afferent nerves in various tissues, including those of the bony spine, in which the peripheral ends of the nerves are pain sensitive nociceptors. These nociceptors are free nerve endings,[1] and they are present in a variety of tissues, both superficial and deep. Intravenous morphine is short-lived, lasting one to two hours, while epidural morphine, not as a paste, provides 12 or more hours of pain relief. Only one fourth the parenteral dose of morphine is needed in the epidural space.[2]

However, when morphine is an integral component of a paste in a local part of the epidural space, a small amount

will traverse the dura, and the rest should have a lower escape rate into the blood vessels of the general epidural space. According to Eisenach, "Life-threatening respiratory depression from neuraxial morphine is generally accepted as having an incidence of 0.1% to 0.5%."[2] The risk of a single small dose of epidural morphine should be vanishingly low when used in lumbar nerve paste to retard its escape from the site of the pathological nerve root(s). The use of epidural morphine for the treatment of pain in human beings was described by Behar et al in 1979,[3] and was compared with intrathecal morphine by Cousins and Mather in 1984.[4] To the author's knowledge, this is the first report of the use of epidural morphine as a nerve paste. The efficacy of the nerve paste in producing prolonged pain relief following lumbar spinal surgery, and the absence of sedation, respiratory depression, or other opiate side-effects, underscores the significance of peripheral pain receptors in the nerves and tissues of the lumbar spine itself.

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Stroke and Automobile Accidents

PASQUALE F. FINELLI, M.D. AND NORA LEE, M.D.

ABSTRACT—To define the causal relationship of ischemic cerebral infarction to automobile accidents in hospitalized patients a computerized hospital record search with ICD-9 diagnostic codes 433 and 434 for occlusive cerebrovascular disease, and E810 and E819 for motor vehicle traffic accidents was conducted over a three-year period. Inclusion criteria required patients be identified as the driver of the vehicle and demonstrate computed tomographic (CT) evidence of an evolving cerebral infarction on serial scans. Of 2,844 ischemic cerebral infarctions admitted to the hospital during the study period, four met the selection criteria. In three, stroke was the cause and in one, the result of the accident. When stroke preceded the accident, visual field defect, impaired consciousness, and/or loss of motor control were major contributing factors. Head CT, detailed accident scene history, and vascular disease risk factors were most important in determining a cause-and-effect relationship of stroke to the accident.

Introduction

SUDDEN driver incapacitation from medical illness most commonly follows cardiovascular compromise or may occur in association with seizure and hypoglycemia. Except for aneurysmal subarachnoid hemorrhage[1] reference to stroke preceding traffic accidents remains anecdotal.[1,2] To define the causal relationship of ischemic cerebral infarction (CI) to traffic accidents, we retrospectively reviewed our hospital experience over the past three years.

Methods

Between May 1992 and June 1995, we identified four drivers who had CI associated with traffic accident among 2,844 ischemic strokes admitted to the Hartford Hospital. Patients were collected from a listing of St. Anthony's Color-coded ICD.9.CM code book for physician payments with index codes 433-434, for occlusion and stenosis of precerebral artery and occlusion of cerebral arteries. Subsequent registry was cross-referenced with ICD codes E811-E819 for motor vehicle traffic accidents (MVA). In order to distinguish a cause-and-effect relationship between stroke and MVA, passengers with stroke in MVA were excluded, leaving four patients in the study group. Events leading up to the traffic accident and history of risk factors for cerebrovascular disease were determined by a review of medical records. A police report of the traffic accident was analyzed in one patient (Case 4). All patients had head CT evaluation within hours of the traffic accident and a follow-up head CT 48-96 hours subsequently. A neurologic examination, carotid duplex scan, electrocardiogram, and transthoracic echocardiogram were completed in all patients and an autopsy obtained in one subject.

Results

Out of a total of 2,844 CI hospitalized at the Hartford Hospital between May 1992 and June 1995, four were drivers involved in MVA when the stroke occurred, result-

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ing in an incidence of 0.1%. The age of the subjects was 45, 71, 73, and 80 years. There were three men and one woman. One of the strokes preceded the MVA by witness account, two were unwitnessed, and one a consequence of the car accident. A sudden loss of response to verbal stimuli and a failure to attend to oncoming traffic in the subject was observed by the passenger in one of the four MVA. In another one-car accident, the patient was found unresponsive to verbal stimuli with minor external injury indicating the possiblity of a change in mentation preceding the MVA. In the third, the patient was struck on the driver-side as he pulled into an intersection to make a left-hand turn. He sustained a concussion and was noted to be confused at the scene. In the fourth accident, the subject was struck by another vehicle sustaining multiple external and internal injuries in addition to the CI. The initial head CTs were unrevealing in two patients whereas subtle signs of CI were present in two (Case 2: hyperdense middle cerebral artery, effacement of sulci, and loss of gray-white matter distinction; and Case 3: effacement of right occipitoparietal sulci with decreased attenuation). Subsequent head CTs showed CI involving the middle cerebral artery distribution in two, the posterior cerebral distribution in one, and both middle cerebral artery and anterior cerebral artery in one. The etiologies of the strokes were cardioembolic in three and in situ thrombosis in one. Postmortem examination of the last case indicated the presence of a preexisting atherosclerotic stenosis of the proximal middle cerebral artery. All patients had underlying risk factors for vascular disease including hypertension in two, diabetes mellitus in one, prior stroke in two, and hypercholesterolemia in two. Two patients with no history of prior cardiac arrhythmia were in atrial fibrillation at the time of hospital admission. The carotid duplex scan revealed possible intracranial carotid occlusion in two patients but none had hemodynamically significant extracranial carotid disease. Transthoracic echocardiogram was unremarkable in all patients.

Case Histories

Case 1.—A 71-year-old woman with history of hypertension was an unrestrained driver who "lost control of her vehicle," which then struck a house. The patient was found by paramedics sitting in the front seat, unresponsive to verbal stimuli and with a blood pressure of 130/60 mm Hg and an irregular pulse of 94. On examination in the emergency room she had a deep laceration on her right frontal scalp extending to the skull and multiple rib fractures. A head CT obtained approximately one hour after the accident was unremarkable except for a right frontal scalp hematoma. Initial blood chemistry and hematologic profiles were normal. An electrocardiogram indicated recent onset atrial fibrillation. Two days after admission, the patient showed evidence of a right hemiparesis as her mentation improved. Neurologic examination at that time revealed a right central facial weakness, right hemiparesis and hemiparesthesia with more involvement of the arm than leg, and a right Babinski sign. A repeat head CT after three days confirmed an ischemic infarct in the left corona radiata extending to the putamen. Subsequent carotid artery duplex scan did not reveal hemodynamically significant extracranial carotid disease. A transthoracic echocardiagram was remarkable for the presence of pulmonary hypertension with mitral annulus calcification, but otherwise no significant valvular disease.

Case 2.—A 73-year-old man with history of hypertension, hypercholesterolemia, and a left basal ganglia infarct 10 years prior with no residual neurologic deficits, was an unrestrained driver when his car struck a guardrail. His wife, a passenger in the car, claimed the patient lost consciousness and slumped onto the steering wheel preceding the accident. Paramedics reported the patient to be unresponsive to verbal stimuli with a systolic blood pressure of 180 mm Hg and an irregular pulse of 82 at the site of accident. Examination in the emergency room showed no external trauma, but the patient was hypersomnolent, and aroused only with painful stimuli. He had right gaze deviation and flaccid left hemiplegia. Blood chemistry and hematologic profiles were unremarkable. An electrocardiogram showed new onset atrial fibrillation with ST-T wave changes. A head CT obtained one hour after the accident disclosed a hyperdense middle cerebral artery, effacement of sulci in the right hemisphere, and indistinct right basal ganglia. Electroencephalography showed widespread depression of normal background and slowing in the right hemisphere but no epileptiform activity. Carotid artery duplex scan was remarkable for an abnormal signal in the right internal carotid artery indicative of intracranial occlusion. A transthoracic echocadiogram was unremarkable. A repeat head CT on the same day revealed a massive right hemispheric infarct with midline shift. The patient became increasingly comatose in the ensuing hours and was pronounced brain dead on the third hospital day.

Case 3.—An 80-year-old man with a past history of a right basal ganglia stroke several years prior and a transient ischemic attack one year ago was the restrained driver involved in a two-vehicle accident. Upon attempting to turn left, after stopped at a stop sign, the patient's vehicle was struck on the driver's side by an oncoming car. He did not lose consciousness but was confused and did not remember the accident. At the hospital, mild left-sided weakness was noted and over the next several days he became increasingly agitated and ignored his left side along with increasing left-sided weakness. A CT scan eight hours after the accident showed an old right basal ganglia infarction, a right perimesencephalic hemorrhage

and sucal effacement, and subtle hypodensity in the right occipital lobe. A follow-up CT at 96 hours showed evolution of a definite right posterior cerebral artery infarction. Carotid artery duplex, electrocardiogram, and transthoracic echocardiogram were normal. Neurologic examination was characterized by a lethargic patient who ignored his left side. There was evidence of mild to moderate left hemiparesis with a dense left homonymous hemianopsia. The patient's condition gradually improved and he was discharged to an extended care facility three weeks after admission.

Case 4.—A 45-year-old man with a history of diet-controlled diabetes mellitus and hypercholesterolemia was a restrained driver of a car that was struck head-on by an oncoming vehicle. The patient was found unresponsive by paramedics at the accident scene. He remained comatose on arrival to the hospital with a Glasgow coma rating of 6 and a CT that showed multiple maxillary bone fractures and early cerebral edema.

After 24-hours, decreased movement of the left side was noted and a repeat CT showed a large right middle cerebral and anterior cerebral artery territory infarction with mass effect. An intracranial pressure monitor was put in place and a barbiturate coma was induced. Carotid artery duplex, electrocardiogram, and transthoracic echocardiogram were normal. On the fifth day the patient suffered a cardiac arrest and was not resuscitated. An autopsy was performed which demonstrated stenosis of the left anterior descending and marginal coronary arteries up to 90% without evidence of thrombosis. Examination of the cerebral blood vessels showed that the right middle cerebral artery contained blood clot and microscopic sections of this area demonstrated almost complete occlusion of the vessel at one level by fibrous atheromatous plaque. The intima was covered with a thin layer of fresh thrombus. Removal of the brainstem and cerebellum showed striking swelling and herniation of the right uncus.

Discussion

Of the four strokes associated with automobile accidents in our series, three were determined to be causally related to the accidents, an incidence of 0.1%. In only one of the four (Case 1) was the correct cause and effect association suspected on admission. The factors favoring CI as the cause of the accident were age >70 years, presence of vascular disease risk factors, minor vehicle damage and head injury, and single motor vehicle accident. At least two risk factors including hypertension, atrial fibrilaltion, and prior CI or transient ischemic attack were present when stroke was causally related. Impaired motor control (Case 1), impaired level of consciousness (Case 2), and visual field defect (Case 3) were major contributors to the accident. Visual field defects may be "silent" and probably account for many stroke related traffic accidents that do not come to medical attention or are managed out of the hospital. In Case 2 the event was witnessed by the passenger who described the driver slumping over before the accident, and on admission the head CT showed a dense middle cerebral artery sign suggesting a cerebral embolic event. In Case 4, the chart described a single-vehicle "rollover" accident, however, the police report notes a two-vehicle accident with the other driver being charged with drunk driving with his vehicle crossing the center line and colliding into the patient's vehicle. This information could have focused the evaluation on traumatic causes of stroke as cervical arterial dissection and thrombosis, especially in view of a maxillary fracture, a condition associated with carotid injury.[3-4] Of note, a patient who would have met study criteria but was excluded because he was a passenger, was a 15-year-old male who developed clinical and CT evidence of a left middle cerebral artery infarction, and who on angiography showed evidence of a carotid artery dissection.

Although CI has occasionally been described in association with motor vehicle accidents[2] establishing a cause-and-effect relationship may be a problem in unwitnessed automobile accidents. However, noticeable early CT findings and careful review of police reports should assist in distinguishing this association. A limitation of our study is that it underestimates the true incidence of stroke-associated automobile accidents, considering victims of minor accidents from stroke may not be hospitalized, or an underlying stroke may be masked in a severely injured patient. Nevertheless, CI appears to be an uncommon precipitant of traffic accidents. Salient CT findings, details of the accident scene, and the presence of multiple vascular risk factors in an older patient are key features to review when considering the possiblity of CI preceding a traffic accident.

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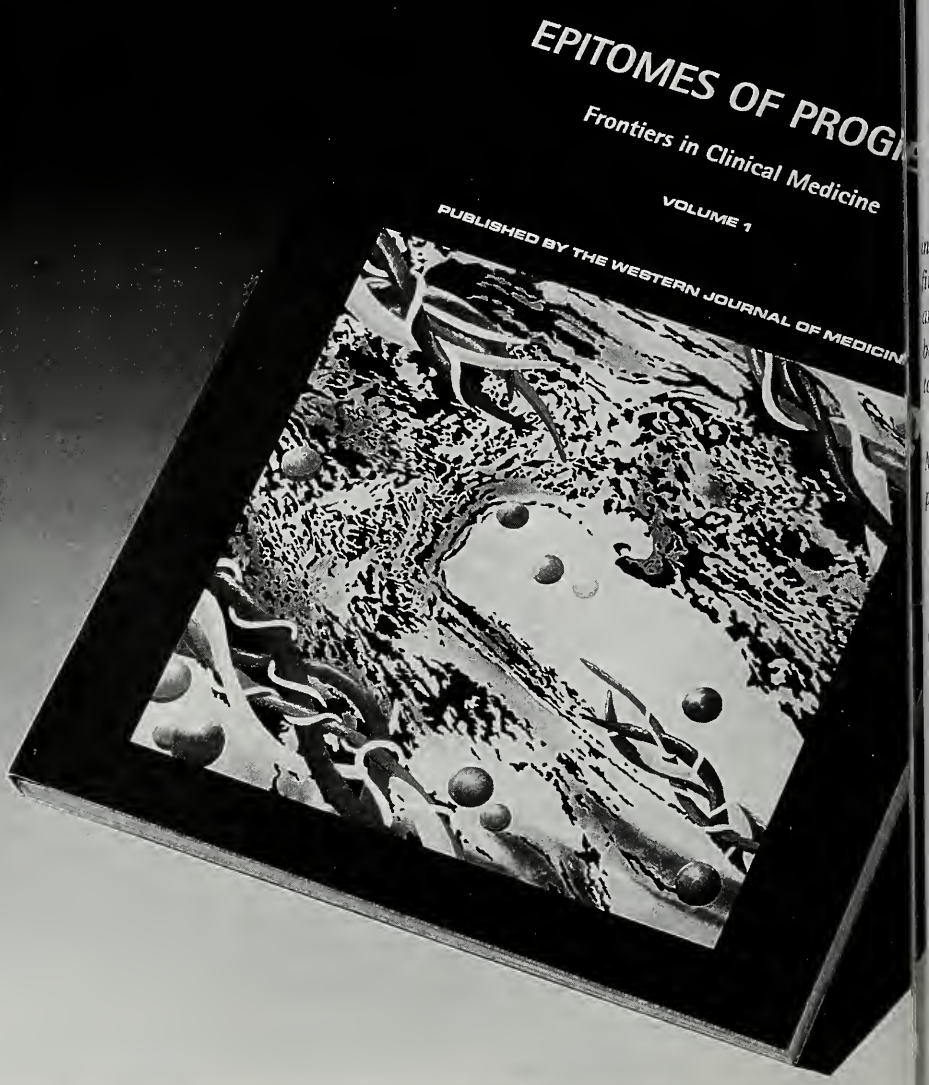
epitome

i-′pit-ə-mē\ *n* [L, fr. Gk *epitomē*, fr. *epitemnein* to cut sh fr. *epi-* + *temnein* to cut — more at TOME] (1520) **1 a** summary of a written work **b** : a brief presentation or st ment of something **2** : a typical or ideal example: EMB MENT (the British monarchy itself is the ~ of traditio Richard Joseph) **3** : Plural — *Epit-o-mes* — A reg FEATURE of *The Western Journal of Medicine*, now availab a single, bound volume.



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Important Advances in Clinical Medicine

Orthopedics

David B. Thordarson, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in orthopedics. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Orthopedics of the California Medical Association, and the summaries were prepared under the direction of David B. Thordarson, M.D., and the panel.

Orthopedic Implications of Tuberculosis

TUBERCULOSIS is undergoing a resurgence in the United States, associated with the acquired immunodeficiency syndrome (AIDS) epidemic, the influx of immigrants from underdeveloped parts of the world, and perhaps some increased complacency in the medical community. About 15% of cases of infection with *Mycobacterium tuberculosis* are extrapulmonary, and of these, 9% to 10% involve the bones and joints. In the vast majority of cases, the organism is delivered to the skeletal system during lymphohematogenous dissemination from a pulmonary focus. The organism may lie dormant in the skeletal system for long periods after the initial dissemination before disease is detected and typically progresses from a focus in the epiphyseal region of the bone, where it may produce either chronic arthritis or osteomyelitis.

Tuberculous arthritis typically occurs as chronic monarthric (monoarticular) arthritis. The infection is slowly progressive. The knees, hips, ankles, and wrists are most often involved. Pain and swelling are common features of this form of arthritis, and years may pass before a diagnosis is established. Biopsy of the synovium will typically yield granulomas. Aspiration with the appropriate stain and culture is always necessary, but the initiation of treatment often requires a high index of suspicion, a positive tuberculin skin test, and sometimes a characteristic appearance on synovial biopsy. A positive smear culture is always a reassuring confirmation of the diagnosis.

Therapy now relies on the use of a four-drug combination for sensitive stains of *M. tuberculosis,* at least for the first two months, followed by prolonged treatment with isoniazid and rifampin. Treatment durations of at least a year seem appropriate. Surgical debridement is unnec-essary in all but advanced cases; results are excellent if the disease has not progressed. Advanced degrees of joint destruction before therapy is started lead to a poor prognosis.

Tuberculous osteomyelitis most commonly involves the spine (vertebral osteomyelitis or Pott's disease). The disease typically involves the intervertebral disc, leading to destruction of the disc and anterior wedging. The thoracic spine is most commonly involved, followed by the lumbar area. Pus may form and dissect into the neck, groin, buttocks, or other areas, and large paraspinous abscesses may occur. Characteristic roentgenographic changes can be seen with destruction of the disc space and

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bony erosion. Neurologic impairment and damage may occur if caseous or granulomatous material impinges on the cord.

The diagnosis is established through a bone biopsy and culture, either with a needle or with open surgical intervention. Treatment is again largely medical, although surgical treatment may be required to relieve pressure on the cord in patients with neurologic impairment or to stabilize bone. In general, paraspinous abscesses do not require drainage if they are tuberculous in origin and not associated with signs of neurologic compromise. Treatment should be extended for as long as two years. The results of therapy should be excellent if the disease is diagnosed early.

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Bone Graft Substitutes

BONE grafting is commonly used to augment bone repair, with several approaches to reconstructing or replacing musculoskeletal defects. The autogenous grafts can be cancellous, nonvascularized cortical, or vascularized cortical. Because these grafts are associated with several shortcomings, however, including an 8% incidence of substantial morbidity, alternatives to autogenous bone grafting have been developed. Grafting substitutes currently include cancellous and cortical allografts, ceramics, demineralized bone matrix, bone marrow, and composite grafts.

The bone grafting process uses three elements: osteogenesis, osteoinduction, and osteoconduction. Osteogenic cells have the potential to differentiate and facilitate the various stages of bone regeneration. Osteoconduction provides a matrix that is a nonviable scaffolding, conducive to bony ingrowth. Osteoinduction includes chemical or physical agents that induce the various stages of bone regeneration. Each of the graft substitutes has one or more of these components.

Allografts can provide structure and an osteoconductive environment. They provide local growth factors and osteogenic cells. Structural allografts induce a modified rejection response from the host that varies from massive dissolution of the graft to benign neglect. These grafts have a substantial rate of nonunion (>10%), fracture (>10%), and infection (15% to 20%). In addition, the grafts can carry hepatitis and the human immunodeficiency virus (HIV; 1 per 1 million cases).

Ceramics are grouped into hydroxyapatite and tricalcium phosphate. Hydroxyapatite is similar to the human bone mineral phase, with the exception that the ceramic does not include the many imperfections of human bone. It is turned over slowly (>10 years). Tricalcium phosphate is converted in the body in part to hydroxyapatite. It is more easily resorbed, but large segments of this ceramic still last beyond five years. Synthesized ceramics are brittle, lack direct porous connectivity, need bony ingrowth to improve their mechanical properties, and require either osteogenic cells or growth factors to succeed. A new form of ceramic synthesized from coral has the three-dimensional microstructure of bone. These coralline ceramics are commercially available with average pore sizes of 500 and 200 μm.

Demineralized bone matrix removes the mineral phase and exposes the underlying bone collagen and growth factors, most notably bone morphogenetic protein. These grafts have no structural capability but provide sufficient bone morphogenetic protein to osteoinduce bone in osseous defects.

Bone marrow has a substantial number of osteogenic cells that are capable of providing bony regeneration. It has been demonstrated that 150 cm^3 of bone marrow can successfully heal established tibial nonunions. Most researchers in the field of bone grafting urge the coinsertion of bone marrow with any of the bone graft alternatives.

Composite grafts combine hydroxyapatite and tricalcium phosphate with bone marrow to heal bone defects. In a randomized controlled study, Collagraft performed as well as autogenous bone graft in repairing long-bone fractures. When the grafting site is compromised, a composite of particulate ceramic, bone marrow, and demineralized bone matrix that incorporates all the regenerative elements may be just as effective as autogenous cancellous bone graft.

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Arthroscopic Subacromial Decompression for the Shoulder Impingement Syndrome

A PAINFUL shoulder impingement syndrome has become a more meaningful problem in industrialized society because many occupations now necessitate

prolonged periods of overhead activity. In this position, the shoulder is vulnerable to injury, especially the superior glenohumeral and inferior acromial structures. Repetitive damage can lead to the progression of the disease and eventual permanent shoulder disability. Most patients, however, respond to a simple treatment program aimed at modifying their activity, reducing inflammation, and strengthening the shoulder muscles.

The impingement syndrome of the shoulder compromises the space between the coracoacromial arch and the humeral head, resulting in soft tissue injury. The anatomic structures of the coracoacromial arch make up a roof over the humerus and include the coracoid, the coracoacromial ligament, the acromioclavicular joint, and the acromion. The subacromial bursa, the supraspinatus tendon, and the tendon of the long head of the biceps brachii are most commonly injured by the impingement syndrome. Forward flexion and internal rotation of the humerus bring these structures under the coracoacromial arch. This is especially true when the space is further compromised by anterior acromial osteophytes. It is also possible that persons with an acromial undersurface that is downward curved or hooked may be predisposed to the impingement syndrome.

Patients with the impingement syndrome initially have pain when they reach upward. Often there is also pain with motion behind the back, as occurs when reaching into the back pocket of pants. Athletes have specific complaints, and throwing a baseball provides a good model for all overhead throwing sports. Pitchers complain of pain in the anterior shoulder during the acceleration phase or sometimes the follow-through. Initially the pain subsides after a short rest, but pain may become relentless if the offending activity is not stopped. The pain is especially intense with forward flexion and internal rotation. Physical examination reveals tenderness with palpation of the anterior acromion, and the Neer impingement maneuver reveals pain during passive forward flexion of the shoulder. Irritation of the rotator cuff may be reproduced by pain and weakness with specific strength testing. It is especially helpful to infuse 10 ml of lidocaine into the subacromial bursa and then to repeat the Neer impingement test. If the impingement syndrome is the sole problem, there should be a 70% to 100% diminution of the pain and normal rotator cuff strength.

An early impingement syndrome is reversible with rest, nonsteroidal anti-inflammatory medications, and rotator cuff-strengthening exercises done with the arm at the side. In more severe, chronic cases, administering steroid into the subacromial bursa is helpful in decreasing inflammation. Overhead activities should be restricted until symptoms abate. Most patients have a favorable response to nonoperative treatment for six months, but in unusual cases with persistent shoulder pain, operative decompression is efficacious.

Last, when the shoulder impingement syndrome is manifest, it is important to look for other, often-associated disorders. Rotator cuff tear, glenohumeral instability, and generalized ligamentous laxity can be the primary problems in these patients. An accurate diagnosis and treatment aimed at the complete shoulder injury are required for a return to pain-free function.

Open acromioplasty to decompress the space between the coracoacromial arch and the humeral head has had satisfying results. Now arthroscopic subacromial decompression has been championed as an alternative to the open procedure because of decreased morbidity, full visualization of the space without detachment of the deltoid origin, an early return to normal activities, and the ease with which the operation can be done on an outpatient basis. Results compared with those of open acromioplasty have been favorable concerning the elimination of pain, the return of shoulder function, strength, and range of motion, and patients' satisfaction. This technique is generally more technically demanding than the open procedure, however, and failures have been reported, usually due to inadequate resection. For this reason, evaluating for acromial disease before the operation, adequately visualizing the subacromial space, using a precise technique, and determining the adequacy of resection are all important for a successful result.

Recent investigations have confirmed long-held suspicions concerning the importance of the coracoacromial arch. It is likely not the "appendix of the shoulder," and complete resection of the coracoacromial arch may predispose the shoulder to glenohumeral injury, such as subtle instability or rotator cuff injury. For this reason, future areas of research include examining the role of the coracoacromial arch in normal shoulder function and determining the indications and technique of partial resection.

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Anterior Cruciate Ligament Repair in Children

INCREASED participation by youngsters in organized sports has resulted in an increased incidence of anterior cruciate ligament injuries in skeletally immature persons. The long-term outcome of nonoperative, conservatively treated, unstable anterior cruciate ligaments in children is similar to that in adults. A large percentage will continue to have episodes of swelling, giving way, catching, and locking. This results in meniscal and cartilaginous disease.

Twisting, deceleration, contact, or noncontact injuries are common in these persons. Hemarthrosis is usually present on examination. This, coupled with a positive Lachman sign and a positive anterior drawer sign, makes the diagnosis. The Lachman test is performed by applying anterior pull to the fibia with one hand while the femur is stabilized with the other. The patient should be supine and the knee flexed at 30 degrees. The pivot shift sign may be present but is often difficult to elicit in the acute stage. Meniscal tears are commonly seen in association with anterior cruciate ligament tears, similar to the case in adults.

X-ray films are important to diagnose pull-off fractures and to evaluate the distal femoral and proximal tibial growth plates. Magnetic resonance imaging, although not necessary to diagnose an anterior cruciate tear, can be used to reveal meniscal disease in those electing a nonoperative, conservative approach. If meniscal tears are identified, a more aggressive surgical approach should be considered. Nonoperative management of these patients results in the high likelihood of subsequent bouts of giving way, catching, and locking. In patients without meniscal tears, bracing and restricting activity until the growth plate closes are an option.

Surgical treatment remains controversial. Adolescents within six months of epiphyseal closure can undergo intra-articular anterior cruciate ligament reconstruction without substantial risk of leg-length inequality or angular deformity. The younger the child, however, the greater the risks of epiphyseal complication. Intra-articular grafts, avoiding both growth plates by passing over the front of the tibia and over the top of the femur, have been described. Similarly, grafts through the central portion of the tibia to minimize tibial epiphyseal changes and then over the top of the femur have also been reported. These techniques come from large centers but with a small number of patients. Physicians who see only an occasional case might be wise to use a more conservative surgical approach or to make the appropriate referral until more information is obtained in this regard.

All agree, however, that meniscal tears in young patients should be repaired if at all possible. Meniscal repairs with extra-articular tenodesis or bracing until the epiphyses approach closure, though not optimal, are an acceptable conservative surgical approach at this time. This should be coupled with strong advice to curtail high-risk activities such as football, volleyball, and skiing until the growth plate closes and a strong intra-articular graft can be placed.

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The Ilizarov Method

TWENTY years ago there was a resurgence throughout Europe and the United States in the use of external fixation for the management of fractures and limb deformities. Advancements in materials and techniques have reduced the soft tissue complications previously precluding the use of this method.

Simultaneously in Kurgan, in what was then the Soviet Union, G. A. Ilizarov developed his technique of distraction osteogenesis. This important advancement facilitated limb lengthening, eliminating many of the complications and decreasing the amount of surgical intervention. Ilizarov pioneered the use of a tissue-sparing, cortical osteotomy-osteoclasis technique. This technique preserves the osteogenic elements in the limb. Ilizarov advocated a delay of several days before the initiation of distraction to allow the creation of a preliminary callus that could then be lengthened. He perfected the high-frequency, small-step distraction rhythm that permitted good-quality bone to regenerate and decreased soft tissue complications such as nerve and vessel injury.

This technique produces good-quality bone formation, minimizing the prevalence of nonunion (requiring further bone grafting) or premature consolidation of the lengthened segment (requiring osteotomy and osteoclasis to be repeated). Limb-segment lengthening of as much as 140% is now not only possible, but commonplace.

As the Ilizarov methods were learned in Europe and the United States, advancements in materials and external fixator biomechanics quickly modified the technique. This expanded the indications for the treatment of congenital and acquired limb deficiencies. Different external fixation configurations, modifying the ring fixator to uniplanar and biplanar frames and adding transfixion pins and half pins to the wire fixation methods, are now standard.

Complications still interfere with the successful management of limb deficiencies. These complications are predictable enough to have changed the nomenclature in the limb-lengthening literature. Complications that can be treated and do not alter the predicted results are referred to as "problems." Only those complications that alter the predicted outcome are truly "complications." Future trends to improve the Ilizarov method will reduce the complication rate. The goals will be to prevent pin-track infection and osteomyelitis, premature or delayed consolidation of bone, angular or axial deviation of the regenerate bone, joint contracture or instability, neurovascular compromise, and psychological adjustment reactions.

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Necrotizing Soft Tissue Infections

NECROTIZING soft tissue infections have recently received substantial publicity in the lay press. These infections present as a variety of clinical, microbiologic, and pathologic syndromes that have received a confusing array of names, including hemolytic streptococcal gangrene, postoperative bacterial synergistic gangrene, Fournier's gangrene, monomicrobial necrotizing cellulitis, nonclostridial anaerobic cellulitis, gram-negative synergistic necrotizing cellulitis, and necrotizing fasciitis.

The hallmark of all these syndromes is infection of the subcutaneous tissue and fascia that produces necrosis, with relative sparing of the muscle. Differentiating between these syndromes clinically is often impossible, and some have suggested abandoning attempts at classification and adopting a common approach to all of them.

Necrotizing soft tissue infection remains a relatively uncommon disease. Although these infections can affect any part of the body, the extremities are most commonly affected. Patients often have underlying diseases, such as diabetes mellitus, injection drug use, chronic alcohol abuse, or peripheral vascular disease. Many cases occur in the postoperative period, especially after an intra-abdominal operation.

Necrotizing soft tissue infections may be due to either a monomicrobial or a polymicrobial process. Although group A streptococci are the most common cause of a monomicrobial infection, other organisms may cause similar syndromes, including *Vibrio vulnificus, Clostridium perfringens,* and fungi such as *Rhizopus, Mucor,* and *Absidia* species. Polymicrobial infections usually involve a combination of streptococcal species, *Staphylococcus aureus,* members of the *Enterobacteriaceae,* and anaerobes. Because these infections spread rapidly and are devastating and life-threatening, early diagnosis and aggressive therapy are keys to successful treatment. The difficulty is that, early in their course, necrotizing infections can appear similar to nonoperative cellulitis. Thus, early diagnosis depends on a high index of suspicion for the disease. Clinical signs suggestive of a necrotizing infection include edema that extends beyond the area of skin erythema, the absence of lymphangitis or lymphadenitis, the presence of gas in the soft tissues and skin vesicles, and progression to focal ecchymoses or skin necrosis.

Once the diagnosis of a necrotizing infection is suspected, prompt and aggressive treatment is essential. Early radical debridement of all necrotic and ischemic tissue remains the most important aspect of treatment. Empiric, broad-spectrum antibiotic therapy is an important adjunct to aggressive debridement and can later be tailored, based on the results of cultures of surgical specimens. A single agent such as imipenem or the combination of piperacillin sodium and tazobactam sodium could be used, although recent literature suggests that the use of clindamycin phosphate may be more effective than penicillin in patients with severe infections caused by group A streptococci. The efficacy of hyperbaric oxygen therapy remains unproved.

The mortality of necrotizing soft tissue infections is high. Reported mortality in published series ranges from 9% to 64%, with a cumulative mortality in reports over the past 30 years of 38%. This high mortality can be reduced only by increased awareness by physicians of this disorder, resulting in early diagnosis, early aggressive debridement, broad-spectrum antibiotic therapy, and aggressive wound care.

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Women's Shoe Wear and Foot Disorders

FOREFOOT abnormalities occur predominantly in shoe-wearing societies. In the United States, it is estimated that 43 million persons yearly have foot complaints and that a third of these eventually seek medical care. The incidence of foot problems increases with increasing age. Footwear had been indirectly implicated as the cause of orthopedic forefoot problems in western societies. Published studies regarding societies that do not wear shoes demonstrate that forefoot problems are relatively uncommon. Unshod natives from Pacific Rim countries and Africa substantiate the fact that these populations have relatively few foot problems. Also, as these populations age, there does not appear to be an increase in the incidence of forefoot problems. Heretofore, there has been a paucity of information regarding the incidence of these problems in men compared with women.

A review of the number of surgical procedures done over a 15-year period showed that 87% of the forefoot procedures were in women. There was an equal incidence in both men and women of surgical procedures such as ankle fusions and ankle fractures, problems that are obviously not related to constricting shoe wear. In regard to specific diagnoses, women again had a much higher frequency of surgical procedures: hallux valgus procedures, 94%; hammertoe repairs, 81%; neuroma excisions, 89%; and bunionette corrections, 90%. With increasing age, the frequency of surgical correction increased as well. The fourth, fifth, and sixth decades were the most common age group for the surgical correction of these problems.

A conservative estimate for physician and hospital fees and time lost from work following forefoot surgical reconstruction is $2 to $3 billion a year. Although some of these procedures may be unavoidable, many may be prevented with the use of roomy, comfortable footwear.

The solution for many of these patients is to wear roomy shoes. Patient education is the key to success. The forefoot tends to spread with age, and patients cannot wear the same shoes that they wore when they were 20 years old. In a survey of 356 healthy women, 80% had foot pain or deformity. About 88% of those examined wore shoes that were too narrow by at least 13 mm (0.5 in). Most women's feet are about 8.25 to 10 cm (3-1/4 to 4 in) wide, although many fashionable shoes are available only in an 8-cm (3 in) width. Shoes may be stretched to accommodate bony prominences. Purchasing shoes that have more forefoot width can substantially lessen the amount of forefoot discomfort.

Lowering the heel height can have an important effect on patient comfort as well. A 2-cm (3/4 in) heel increases forefoot plantar pressure by 22%; a 5-cm (2 in) heel increases plantar pressure by 57%, and an 8.25-cm (3-1/4 in) heel increases pressure by 76%. Initially this pressure may cause pain, but in time, may lead to hammertoe, neuroma, bunionette, and bunion formation. Obviously, high-fashion shoes cause increased pressure and pain in the forefoot, and with time, permanent deformities may occur. Lowering the heel height decreases not only side-to-side pressure, but also the pressure in the forefoot as the foot slides downward into the toe box.

Wearing shoes that hold the foot securely in place will help patients who have a complaint of a wide forefoot and a narrow heel. Lace-up, sling-back, or T-strap styles will help to hold the foot in place.

It is helpful to have a list of shoe stores where roomy shoes can be purchased. Questioning patients about where they have purchased a reasonably roomy shoe that is fashionable in appearance is a good way to keep a current list. Women on physicians' office staff can also help with gathering information about shoe stores that have reasonable shoes.

Patients should be warned that a "break-in" period is not a good idea because it is a period when the forefoot is compressed and constricted within a tight toe box. A patient should refuse to buy a pair of shoes that are tight, constricting, or uncomfortable.

It is important to make women aware of the damage associated with ill-fitting footwear. Increased public awareness is an important step in reducing the incidence of forefoot problems in women. The "emancipation" of women's feet will not occur rapidly, but physicians can take an active role in counseling and educating their patients regarding the ill effects of high-fashion footwear.

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Treatment of Fractures of the Femur in Children and Adolescents

ALTHOUGH the standard of care in the treatment of femur fractures in adults is intramedullary nailing, treatment in children and adolescents is age-based and has evolved in recent years. The exact treatment regimen

depends on the growth remaining, the size of the patient, the time to fracture healing, the remodeling potential of the fracture, and social factors, including parental work schedules, the extent of daily care needed for the child, and time missed from school, to name a few.

The causes of femur fractures in children younger than four years is related to abuse in 30%, high-energy trauma in 9%, simple trauma in 49%, and disease in 12%. In patients older than four years, most are trauma-related. Signs of abuse need to be recognized, however, and include an unreasonable history, a delay in treatment, and many unexplained injuries.

The treatment of most fractures of the femur in children younger than six years is the immediate application of a spica cast if the fracture is stable. In infants younger than six months, a Pavlik harness or a splint can be used for stable fractures. The "telescope test" can be used for determining the stability of pediatric femur fractures. Patients with suspected abuse should be admitted, placed in traction, and observed until a cause can be determined. The spica cast can be applied in the emergency department or cast room under sedation or general anesthesia, depending on the patient's need and the surgeon's preference.

Acceptable limits of alignment include 20 degrees varus or valgus and 1.5 cm of shortening. Correct rotational alignment is preferred. Children with multiple trauma or open injuries should be considered for surgical stabilization, depending on the size of the patient and the nature of the injuries.

Children aged six through 12 represent the group in which treatment methods have recently evolved. The standard of care continues to be traction, which can be skin traction or 90-degree—90-degree femoral pin traction, followed by spica cast. Reasons for considering other alternatives in patients with isolated femoral shaft fractures include shortening the hospital stay, improving the outcome, returning the patient to school and the parents to work, cost savings, and various social concerns.

The time in traction for children in this age group averages two to four weeks, followed by eight to 12 weeks in a cast. This may result in a weak quadriceps, a stiff knee, and loss of alignment. There is renewed debate regarding acceptable limits of shortening and potential for "overgrowth" and remodeling in this age children.

Cost savings involve not just the hospital stay, but also time off work for parents and nursing needs at home.

Options for alternative treatment include external fixation, plate fixation, and intramedullary nailing with rigid or flexible nails. Any method can give satisfactory results. The particular method must be individually chosen, based on the physician's experience and the patient's needs. With improved devices, external fixation has become the preferred method in this age child for many physicians. Advantages include adjustability, ability to maintain desired reduction, ability to allow immediate weight bearing, an early return to school, decreasing hospital stays to less than a week, and improved quadriceps and knee function.

Intramedullary nailing with insertion through the proximal femur carries a high complication rate in this age group, with many reports of greater trochanteric overgrowth and avascular necrosis of the femoral head. Small flexible nails inserted from the distal femur are preferred by some surgeons, and initial reports show promise. Plate fixation allows anatomic reduction, but is not a mechanically favored device and leads to problems with overgrowth. Nevertheless, several series document a low complication rate with this method. Complications with all methods of internal fixation include hardware failure, infection, neurovascular injury, and hypertrophic scarring. The need for hardware removal must also be considered.

Adolescents older than 13 years can be treated as adults. Preferred treatment is anatomic reduction and stabilization with an intramedullary rod. Until physeal closure, the risk of avascular necrosis remains. Modifications in standard technique seem to reduce this risk, but prospective studies are not yet completed. For those unwilling to accept the risks associated with intramedullary nailing, traction followed by a spica cast or cast brace remains an option. Treatment times with these techniques can be prolonged and can lead to knee stiffness and unacceptable alignment and shortening after fracture union in as many as 20%. Other options in this age group include external fixation and plating.

Decision making in the treatment of children and adolescents with femoral shaft fractures continues to evolve. Treatment is age-related, and many factors need to be considered when choosing treatment for any individual patient.

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Surgical Indications for Spinal Instrumentation in Degenerative Diseases

INTERNAL fixation helps obtain a fusion and decrease the pseudarthrosis rate, maintain alignment, reduce deformities, stabilize the spine, and open neural foramina, particularly in patients with spinal stenosis, degenerative spondylolisthesis, or scoliosis. Lumbar segmental fixation is also particularly useful in patients with osteoporosis and where there is a lack of lamina available for conventional fixation techniques. Traditional posterior fixation systems that distract the lumbar motion segments—for example, Harrington or Knodt rods—lead to lumbar kyphosis, require intact laminae, and invade the canal. Pedicle-based segmental fixation improves torsional stability and helps maintain lumbar lordosis. The number of instrumented vertebrae is reduced, thereby preserving distal or proximal motion segments. This may reduce the future incidence of low-back pain.

More important than the decision to use instruments, however, is the choice to fuse. Fusions are indicated when a laminectomy is being considered for several reasons: treating degenerative conditions with one segment translation at motions greater than 4 degrees, stenosis with scoliosis, lateral slip, or surgical revision of the lumbar spine. In addition to these general recommendations, fusion should be considered when decompressions lead to the removal of the equivalent of one facet or if there are no large, bridging osteophytes present to stabilize the spine after a long or a wide decompression. In a prospective clinical study evaluating 124 patients undergoing lumbar fusions for degenerative conditions, the fusion rate greatly increased when rigid segmental fixation was used to supplement the fusion. In patients with in situ fusions, 71% had good to excellent clinical results, and 65% were fused. Those with semirigid pedicle instrumentation and bilateral, lateral autograft fusion reported good to excellent results in 89%, with a 77% fusion rate. The best results were observed in those who had a rigid pedicle screw-based system inserted to supplement the fusion. In this group, 95% reported good to excellent results, and a 95% fusion rate was achieved.

A recent meta-analysis evaluating available data in the literature related to the surgical treatment of patients with leg symptoms related to degenerative spondylolisthesis showed that patient satisfaction improves when spinal fusion is performed, and the fusion rate is enhanced when spinal instrumentation is used to supplement the fusion.

A large retrospective study involving 314 physicians and 2,177 patients who had pedicle screw placement for degenerative spondylolisthesis was reported in the literature and to a Food and Drug Administration (FDA) scientific advisory panel. In this study also, 456 patients had noninstrumented surgical fusions for degenerative spondylolisthesis (in situ control). Compared with the controls, patients with pedicle screw-based systems had a significantly higher rate of fusion (89% *vs* 70%), spinal alignment and clinical outcomes improved, and there was less pain, better function, and greater neurologic recovery. The rates of complications, reoperations, and deaths were similar in the two groups. A failure to place the pedicle screws in the correct location may lead to a neurologic deficit and a loss of fixation. The incidence of this complication decreases with experience, however. Implant breakage occurs, but in the retrospective cohort study, the reported rate was less than 1%. The infection rate with instrumented fusions is about two times higher than in the in situ group. The cost of the procedure is higher when instrumentation is used (increased blood loss, increased operative time, and the instrumentation itself), but this should be weighed against the improved function, increased fusion rate, and increased clinical success with an earlier return to work.

Instrumentation when used appropriately in degenerative conditions of the spine leads to a higher fusion rate. The relative indications for instrumentation include revision operations, cases of degenerative spondylolisthesis, fusion over multiple levels, scoliosis, stenosis with scoliosis or lateral slip or in cases where iatrogenic instability is created at the time of an operation. Of note, bone screws placed in the pedicle have not been cleared for this use by the FDA. Screws, as bone screws, are cleared for use in bone. Some companies have specific clearances to advertise and market their devices as pedicle screws for use in the treatment of grade 3 or 4 spondylolisthesis of L-5 over S-1, when used in conjunction with a posterolateral autograft fusion, with plans to remove the device after fusion is obtained.

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Riluzole for Amyotrophic Lateral Sclerosis

THE U.S. Food and Drug Administration (FDA) has approved "early access" use of riluzole (*Rilutek*—Rhône-Poulenc Rorer) for treatment of amyotrophic lateral sclerosis (ALS). Riluzole is the first drug to become available for treatment of this condition. The premarketing supply is limited; the manufacturer (1-800-798-7425) has enough on hand to treat 3,000 of the 25,000 patients with the disease in the United States, and those 3,000 have already been selected through a lottery. Similar arrangements have been made in several European countries. Riluzole is not available commercially in any country.

AMYOTROPHIC LATERAL SCLEROSIS—ALS is a progressive degenerative disease of motor neurons with a median survival of three to four years after diagnosis. The etiology of the sporadic form is unknown, but according to one theory, accumulation of glutamate, the principal excitatory neurotransmitter in the brain, may cause "excitotoxicity" that leads to neuronal injury or death (Lipton SA, Rosenberg PA: *N Engl J Med* 1994; 330:613).

ACTIVITY—Riluzole (2-amino-6-trifluoromethoxy benzothiazole) inhibits glutamate release presynaptically, possibly by blocking sodium channels, and may block postsynaptic receptors as well (Mizoule J, et al: Neuropharmacology, 1985; 24:767).

CLINICAL TRIALS—Two clinical triails have tested use of riluzole in patients with ALS. In one of these (Bensimon G, et al: *N Engl J Med* 1994; 330:585), the maximum advantage associated with riluzole occurred after nine months of treatment; at that point, 67 (87%) of 77 patients taking riluzole and 52 (67%) of 78 taking placebo were alive without a tracheostomy. After 12 months, the incidence of tracheostomy-free survival was 74% with riluzole and 58% with placebo. By the end of the trial (patients were treated for a median of 19 months), 49% of the patients who took riluzole and 37% of those placebo were alive without a tracheostomy, still a statistically significant difference. Patients taking riluzole also had a slower rate of deterioration of muscle strength.

A second trial in 959 patients, presented to an FDA advisory committee but published to date only as an abstract (Lacomblez L, et al: *Electroenceph Clin Neurophysiol* September 1995; 97:S68), tested three different dosages of riluzole (50, 100, and 200 mg/day) *vs* placebo. Average tracheostomy-free survival was about three months longer in patients taking 100 or 200 mg per day than in those who took 50 mg or placebo. The maximum difference in the incidence of tracheostomy-free survival occurred after about 12 months of treatment; by the end of the trial (18 months), the difference was not statistically significant. In this study, the drug had no detectable effect on the rate of deterioration of muscle strength.

ADVERSE EFFECTS—Riluzole generally has been well tolerated. Nausea and vomiting, increased asthenia and spasticity, and increased aminotransferase activity have occurred.

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CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the two sets of hard copy.

Please send them to:

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The Good Gift: A Comparison of the Eli Lilly Presentation Copies of *Aequanimitas**

ROBERT C. KIMBROUGH, III, M.D.**

THE book *Aequanimitas With Other Addresses to Medical Students, Nurses and Practitioners of Medicine* by Sir William Osler was first published in the United Kingdom in 1904 by H. K. Lewis. It was simultaneously published in the United States by P. Blakiston and Sons. Numerous editions and printings have followed. The second edition had the addition of three addresses and "remarks" from a farewell dinner. In the United States the third edition was issued in February of 1932 and contained the same material as the second edition. Eli Lilly and Company purchased a large number of the third United States edition and distributed these to graduating medical students throughout the United States from 1932 through 1953. Most bibliophiles have considered these volumes to be identical. However, there are numerous differences.

From 1932 through 1953 the Eli Lilly Company distributed approximately 150,000 copies of the third edition of *Aequanimitas* to graduating medical students in the United States. English was the usual language. However, there is a Spanish edition published in 1942 and a Portuguese edition published in 1944. There are at least seven different United States printings. The largest of these was of February 1932. Other printings are dated: November 1942, October 1943, August 1944, January 1947, December 1948 and February 1951. The publisher of the first, second, and third United States editions of *Aequanimitas* was the Blakiston Company of Philadelphia.

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They published all of the Eli Lilly presentation copies. Blakiston was absorbed by McGraw-Hill in 1954. The Maple Press of York, Pennsylvania was the printer of all these volumes. Information from catalogs of the Blakiston Company dated in 1954 indicates the last of these similar volumes was printed in 1951. The catalog from McGraw-Hill dated 1969 list a reprint of the book in 1961. However, this issue is quite different from those that were used as presentation copies.

Each of the presentation books was accompanied by a letter pasted on the free front end paper. In addition, some of the books were presented with business cards of the pharmaceutical company. Over the years the contents of the letters have changed, the letterheads have changed, and the signatures of the President of Eli Lilly and Company have also changed.

The Eli Lilly and Company was founded by Colonel Eli Lilly in the late 1800s. It is headquartered in Indianapolis, Indiana. Colonel Lilly remained president from 1876 to 1898. His son, J. K. Lilly, Sr., became president in 1898. He remained in that position until 1932. He then retired and died in 1948. J. K. Lilly, Sr. had two sons, Eli Lilly and J. K. Lilly, Jr. Eli Lilly became president of the company in 1932 and continued until 1947. J. K. Lilly, Jr. became president in 1947 and remained president until 1953. Of note, while J. K. Lilly, Sr. was living J. K. Lilly, Jr. retained the Jr. in correspondence and signature. When J. K. Lilly, Sr. died in 1948 J. K. Lilly, Jr. dropped the Jr.

The data to be presented have been gleaned from the author's personal book collection, and information kindly supplied by historians, bibliophiles, book dealers, and librarians. Information from annotated bibliographies, computer, and hand searches of various catalogs has also been included.[1-5]

Description

The basic content of the presentation volumes is identical. Each has 453 pages. Despite changes in size and paper material, the arrangement of the wording is the same on each page of the various printings. All volumes are cloth bound with a dark green cloth, Octavo. The differences are to be found in the congratulatory letters, the title page layout and wording, the reverse of the title page layout and wording, the spine, and the size and paper used in publication.

February 1932.—The size of the boards measures 8-1/4" high, 5-3/4" deep and 1-1/2" wide. The leafs measure 8" high, 5-1/4" deep and 1-1/4" wide. The spine has gold imprinting with two straight lines at the top and two at the bottom (Fig. 1). The title is worded: *Aequanimitas with other Addresses*. The author is listed as—Osler. In the mid of the spine are the words third edition. At the bottom of the spine is the word Blakiston. The title page reads: Aequanimitas: With other Addresses to Medical Students, Nurses, and Practitioners of Medicine. The author is listed "by Sir William Osler, Bt., M.D., F.R.S., late Regis Professor of Medicine, Oxford, Honorary Professor of Medicine, John Hopkin's University. In the center of the title page are the words third edition (Fig. 2).

The publishers name and city are at the bottom of the title page in the arrangement of:

Philadelphia

P. Blakiston's Son & Company, INC.

1932

The verso of the title page is blank except at the bottom. The printing company is noted thusly:

PRINTED IN U.S.A.

BY THE MAPLE PRESS COMPANY, YORK, PA.

The congratulations letter has four paragraphs. The letterhead reads:

ELI LILLY AND COMPANY,

INDIANAPOLIS, U.S.A.

The words Office of Eli Lilly, President appear on the left and are in block letters. The date is May, 1932, with 1932 being in Arabic numerals. In the lower left corner of the letter are two capitalized letters "EL". The only hyphenated word in the entire letter is in the first sentence of the last paragraph. There, the word "inspiration" is hyphenated between "i" and "r." The closing "sincerely yours" is centered beneath the word "life" in the last sentence of the last paragraph. Beneath the signature of Eli Lilly is the word "President" that is placed directly beneath the "y" in the word "Lilly."

1933: Is the same as 1932 except the layout of the letter. The letterhead is in three lines:

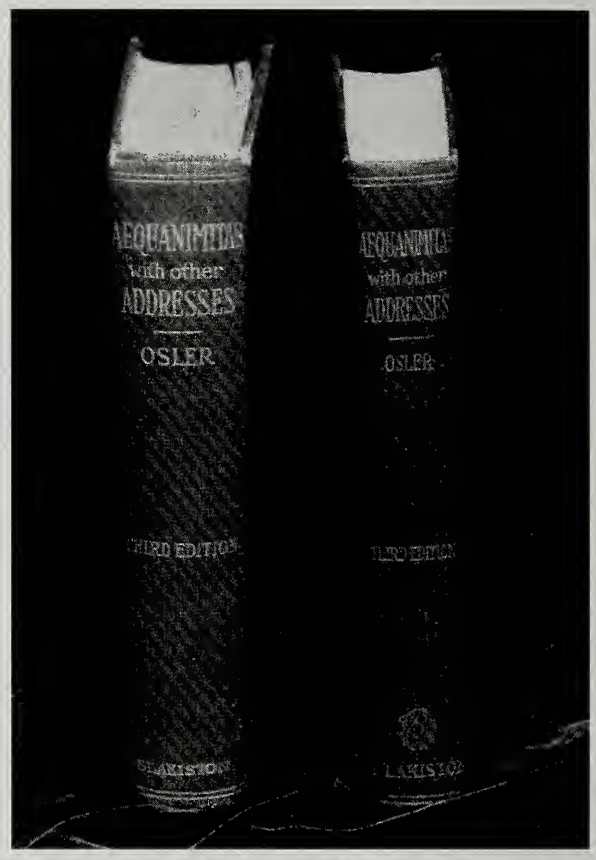


Figure 1.—1932 and 1947 editions.

AEQUANIMITAS

With other Addresses to Medical Students, Nurses and Practitioners of Medicine

By

Sir WILLIAM OSLER, Bt., M.D., F.R.S.

Late Regius Professor of Medicine, Oxford

Honorary Professor of Medicine, Johns Hopkins University

THIRD EDITION

PHILADELPHIA

P. BLAKISTON'S SON & CO., INC.

1932

Figure 2.—Title page, 1932.

ELI LILLY AND COMPANY
INDIANAPOLIS, INDIANA U.S.A.

The date is spelled out and there is no month indication. The letter contains four paragraphs, but with a different arrangement than the first letter. The word "attainment" is hyphenated in the first sentence of the first paragraph, the word "profession" is hyphenated in the last sentence of the second paragraph, the words "knowledge" and "persistence" are hyphenated in the third paragraph and the word "inspiration" is no longer hyphenated in the last paragraph. The closing "sincerely yours" is now shifted to the left to the middle of the page. "EL" no longer appears in the lower left corner.

1934: Is the same as 1933, except for the layout of the congratulation letter. The only hyphenated word in the letter is "passionate" in the second line of the third paragraph. The closing now is placed somewhat to the right.. under the word "abundant" in the last line of the last paragraph. The word "President" is shifted to the left under "Ely".

1935: The book is the same as 1932 and the letterhead has reverted to that of 1932 also. The layout of the four paragraphs is again different with numerous hyphenated words (Figure 3).

1936: Is the same as 1935.

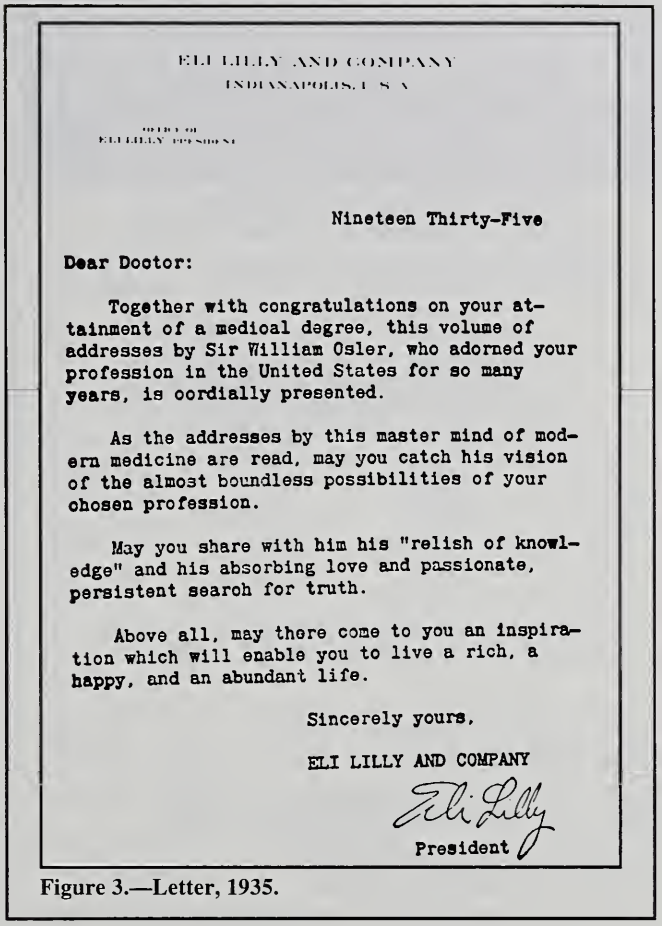
1936-1942: The congratulation letters cease to have any date. The layout of the letters continues to differ in the closing, with placement varying from right to left.

At some time the title page changes. However, there is nothing to indicate the date of that change (Figure 4). The change in the title page is with the indication of the publisher which now reads: The Blakiston Company centered, and beneath that, centered, *Philadelphia.* The letter accompanying these volumes has no date.

One of the undated letters accompanying the "new" title page has the wording changed. The word "writings" is substituted for the word "addresses" in the first sentence of the second paragraph. The overall layout of this letter is also different, as is the ending of the letter. The words "sincerely yours" are now under "an" in the last sentence. The word "president" is now shifted entirely to the right under the word "company" in Eli Lilly and Company.

November 1942: The book and the title page are the same as those later than 1936. However, the letter is now changed to a two paragraph letter, again without a date.

October 1943: The book size and the title page are the same as those after 1936. However, there are now two styles of letters. The letterhead changes to include the postal zone reading: Indianapolis 6, U.S.A. and the words "Office of" and "President" are now italicized rather than in block. The letter's layout and content are the same.



ELI LILLY AND COMPANY
INDIANAPOLIS, U. S. A.

Nineteen Thirty-Five

Dear Doctor:

Together with congratulations on your attainment of a medical degree, this volume of addresses by Sir William Osler, who adorned your profession in the United States for so many years, is cordially presented.

As the addresses by this master mind of modern medicine are read, may you catch his vision of the almost boundless possibilities of your chosen profession.

May you share with him his "relish of knowledge" and his absorbing love and passionate, persistent search for truth.

Above all, may there come to you an inspiration which will enable you to live a rich, a happy, and an abundant life.

Sincerely yours,

ELI LILLY AND COMPANY

Eli Lilly

President

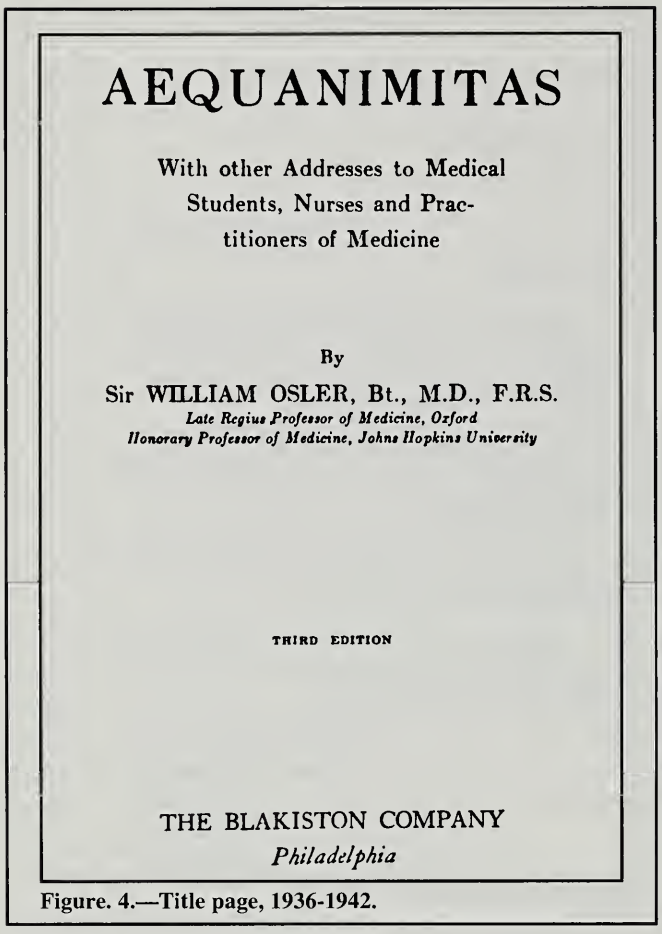
Figure 3.—Letter, 1935.

August 1944: Is the same as October 1943.

January 1947: The book size changes (Fig. 1). The boards now measure 8-3/16" high, 5-1/2" deep, and 1-1/4" wide. The paper is thinner. The leafs measure 7-7/8" high, 5-3/16" deep, and 1" to 1-1/4" wide. A logo has appeared on the spine above the word "Blakiston." This is a script "B" with an open book beneath. On the title page a similar logo appears above "The Blakiston Company"(Fig. 5). On the reverse of the title page, in addition to indicating the printing date, "United States of America" is fully spelled out rather than abbreviated.

The letterhead has now changed to J. K. Lilly, Jr., as has the signature. The two paragraph letter composition and layout is the same as October 1943. The closing has been moved to the left (Fig. 6).

December 1948: The size of the book returns to the original 1932 size and the paper is the same as the 1932 paper. Information on the spine and the title page remain the same as the 1947 book. The reverse of the title page now reads "printing of December 1948". The printers name and location are the same as that of January 1947. The only change in the letter consist of deleting the abbreviation for Jr., both in the letterhead and the signature. The words "sincerely yours" are the furthest to the right of any of the two paragraph/letters .


AEQUANIMITAS

With other Addresses to Medical Students, Nurses and Practitioners of Medicine

By

Sir WILLIAM OSLER, Bt., M.D., F.R.S.

Late Regius Professor of Medicine, Oxford
Honorary Professor of Medicine, Johns Hopkins University

THIRD EDITION

THE BLAKISTON COMPANY
Philadelphia

Figure. 4.—Title page, 1936-1942.

February 1951: The same as 1948, except on the reverse of the title page the word "reprinted" has been substituted for the word "printing" so that it now reads "reprinted, February 1951". The words "sincerely yours" and the signature have been moved to the left, again similar to that of 1943.

Discussion

The above descriptions indicate many differences in the makeup of the book and the presentation letters. The two paragraph letters content and layout are similar enough to believe that they were machine produced. However, I believe the letters from 1932 to 1942 were individually typed. The use of typing pools was quite common in large companies of that era. The most unique of the volumes is that of January 1947. It differs in size, the addition of - B Logo, the change in wording of the printer's location on the reverse title page, change in the letterhead of the two paragraph letter, and the use of the abbreviation for Jr. in J. K. Lilly's name on the letterhead and the signature. The next year the Jr. no longer appears.

Thus, the Eli Lilly presentation copies of the third edition of *Aequanimitas* are not identical, except for the contents of the addresses. The recognition of these differences should open new fields for research and collecting. It is unfortunate that this good gift is no longer distributed to physicians.

Summary

The Eli Lilly Pharmaceutical Company of Indianapolis, Indiana distributed some 150,000 copies of the third edition of Sir William Osler's *Aequanimitas* to graduating medical students between 1932 and 1953. Bibliophiles have considered these volumes identical. However, there were at least seven different printings in English and one in Spanish and one in Portuguese. The size of the book and type of paper changed over the years. The title page, spine information, and printing information also changed. A congratulatory letter from Eli Lilly and Company was placed in the front of each book. These letters have many differences. Thus, the volumes are not identical and the recognition of these differences opens a new field for research and collecting.

Acknowledgement

I wish to thank Drs. Larry Longo, Richard Golden, Bruce Fye, Robert Hudson, Robert Joy and Joseph Wheat, and Professor Jack Key for their invaluable assistance. I also thank Ms. Anita Martin and Ms. Lisa Baines, the

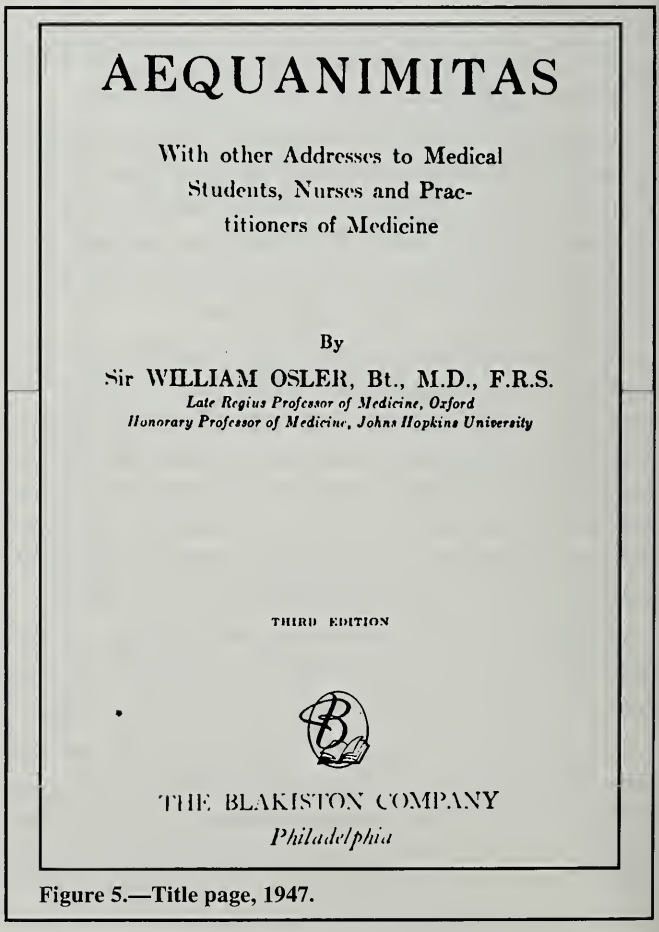

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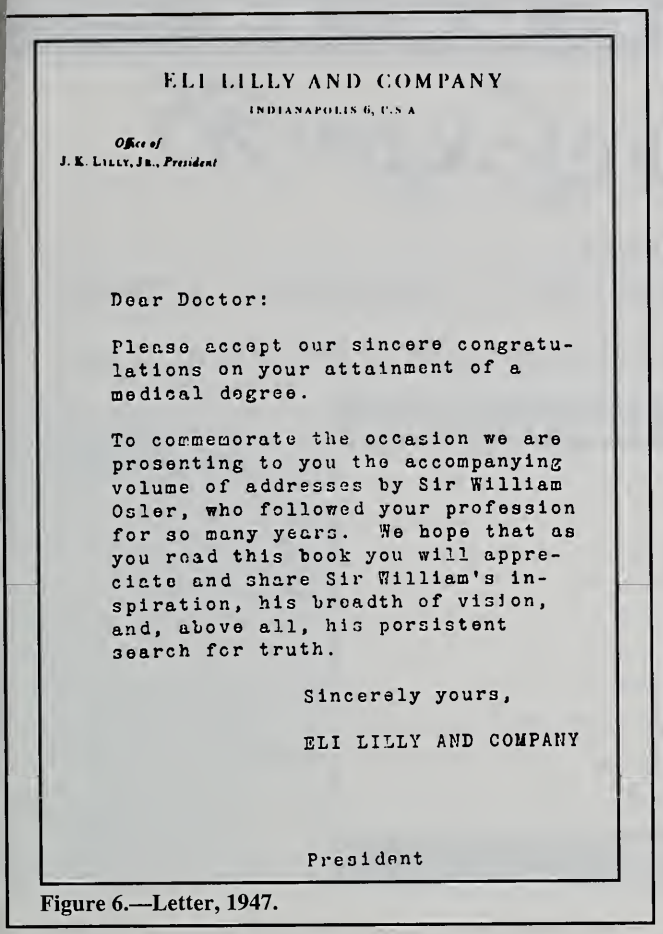
Figure 5.—Title page, 1947.



ELI LILLY AND COMPANY
INDIANAPOLIS 6, U.S.A.

Office of
J. K. Lilly, Jr., President

Dear Doctor:

Please accept our sincere congratulations on your attainment of a medical degree.

To commemorate the occasion we are prosenting to you the accompanying volume of addresses by Sir William Osler, who followed your profession for so many years. We hope that as you read this book you will appreciate and share Sir William's inspiration, his breadth of vision, and, above all, his porsistent search for truth.

Sincerely yours,

ELI LILLY AND COMPANY

President

Figure 6.—Letter, 1947.

Archivist of the Eli Lilly and Company. Ms. Jeannie Cooper of McGraw-Hill Inc. supplied copies of the old catalogs.

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Commentaries

Ethical Dilemmas In Managed Care

In the early 1960s it was decided, after prolonged national debate, that health care in the United States was not a privilege of the economically fortunate, but a right of every citizen. Both the indigent and the elderly populations were considered, and mechanisms were put in place for the care of these two groups, many of whom had previously received their care as "charity cases." The problem in caring for the indigent and elderly was largely urban. In rural communities, both the indigent and elderly were cared for on a voluntary basis by physicians. My late father-in-law, Howard I. Down, M.D., F.A.C.S., a former Governor of the College and president of his state surgical society, showed me his account books in which chickens, eggs, and sometimes knickknacks (which he still had) were given to him by patients in lieu of payment. Of course, they were not payment, but tokens of affection and gratitude. In the urban centers, the sheer volume of the indigent and elderly who could not afford medical care necessitated the creation of the Medicare and Medicaid programs.

Medicare/Medicaid programs

The problem with the Medicare and Medicaid programs was that the federal and state governments never paid their full share. Consequently, both physician providers and institutional providers—namely, hospitals, nursing homes, and so on—were constantly cost-shifting monies from payors of commercial insurance to these programs that were inadequately funded. In the early 1980s, it was clear that while the quality of *medical care* for the indigent might be equivalent to that for the more affluent who had commercial insurance and for those individuals on Medicare, it was impossible to provide similar *amenities,* again because of underfunding. The federal government then tacitly recognized the existence of at least two tiers of care—those individuals with insurance and those individuals either with or without Medicaid (which, in most states, paid physicians poorly). Interestingly, the decision was made almost without any debate, as opposed to the debate in the 1960s. Parenthetically, I hope that we do not evolve to the three-tier system that Uwe Reinhardt has described so effectively. It certainly seems to be happening socially with respect to the geographical differences between the inner city, the suburbs, and the very affluent suburbs. In the hypothetically evolving three-tier system, as it currently exists, the elite will continue to choose their physicians and get "the best treatment money can buy," because they can pay for whomever they wish. The middle class will continue to participate in HMOs and PPOs and have limited access to physicians based on limited panels and costs. Quality will receive its usual lip service, but it will be a long time before quality can be evaluated, despite various attempts to do so. Finally, the indigent will take whatever is left of a shrinking pot, usually in an urban setting with residents and fellows delivering most of their care. While not attractive, it seems that this is where we are evolving.

As Medicaid became less and less adequately funded, and Medicare fell further and further behind commercial insurance, cost-shifting became more prevalent. The cost of commercial insurance, most of which was paid by business, continued to rise at a very rapid rate, far in excess of the rate of inflation. Contrary to popular thought, this increase was not the result of greedy physicians, but simply the attempt by both physicians and hospitals to meet their overhead (of which the indigent were a significant portion), which also continued to escalate at rates far in excess of inflation.

Health System Reform

As the economy became more global, American multinational companies, who heretofore had only to compete within the United States, found themselves competing against powerful, streamlined, and well-run multinational companies with headquarters in other countries: countries in which the cost of health care was partially borne by the government. At this point in time (the mid-1980s), health care was the second most expensive benefit, second only to pension and profit sharing; in some companies, at the then-current rate of growth, it threatened to overtake pension/profit sharing plans as the most expensive benefit. In addition, the trailing health care costs for retirees, if adequately accounted for, threatened to bankrupt most companies, at least on paper. Thus, we witnessed the phenomenon of the right joining with the left to make certain that health care once again became not a privilege, but a right. Unfortunately, the first attempt to carry out this doctrine, the ill-fated Clinton Health Care Reform, was, as one lobbyist put it, "... probably the most poorly carried out initiative that [he] had seen in [his] many years of being a lobbyist in Washington." He accurately predicted, a year and a half before its ultimate demise, that the Clinton plan would end in ruin.

The other problem with health system reform was that it attempted to deal with the needs of the 10% to 15% of underinsured at the expense of most patients who, while

not ecstatic, are reasonably well-satisfied with their health care. In fact, a major survey done in 1993 by the Nuvatis Corporation for the managed care industry found that nearly 80% of Americans noted their own personal care as "good" or "excellent." Only 6.4% rated their current care as "poor." Even more surprising, 55% of *uninsured* persons rated their care as "good" or "excellent." Yet the only statistics trumpeted are that 75% of Americans thought the system should be changed (for others). The argument for the underinsured, unfortunately, took on the hyperbole that the left usually gives its arguments, talking about 37 million needy individuals when, in fact, a good percentage (at least 60%) of the uninsured or underinsured (as many as 20 to 25 million) are young working people under the age of 30 who simply think that they are invulnerable and do not want to pay for health insurance, preferring to buy worldly goods and thinking they will not get sick.

This argument was perhaps most infuriating to me during the entire debate. The typical uninsured person is not the patient on Medicaid. Rather, it is a high school graduate looking for his/her first job or a recently divorced woman waiting on tables until she retrieves her life. Most persons are uninsured for only a short time. While at any given time up to 39 million Americans are without insurance, only 4% of the population is without insurance for over two years. The failure of health reform, however, probably was immaterial to the evolution of health care in the country as reform was proceeding meanwhile on a state-by-state basis and, more important, based on what the large companies who pay for insurance (the customers) and the large insurance companies or managed care organizations devised. The dictum from American industry is clear: "We don't want to pay as much, and we would like to get as much for our money as we can. We assume that the insurance company, the HMO, and the PPO will worry about quality and, quite frankly, we don't care about quality. What we're mostly interested in is cost."

The Selling of Managed Care

The problem as it has currently evolved is that in a managed care situation, 30% to 35% of a premium that is already lower than what was previously spent for patient care is expended for nonbedside expenses—namely, administration, income tax, and profit. This money, which previously would have been spent at the bedside, is immediately taken out of the system. That is the simple, stark fact of managed care. No amount of advertising, of high-minded words concerning maintenance of the entire population versus the individual, counseling, wellness, and so forth will hide the fact that 35% of the premium will be spent on matters other than the patient. It follows, therefore, that there is only one way in which that figure can be achieved and that is by denial of services or, to use a less politically correct word, rationing (the R word), or by substituting physician extenders for physicians or substituting generalists for specialists. Those scenarios are the traditional ways in which costs are held in check.

A number of assumptions have been sold to the public in the selling of managed care, given these changes:

- There will be no loss of quality.
- Physician extenders can recognize illness as easily and as completely as physicians.
- Generalists are as competent in recognizing and treating serious illness as specialists.
- Employees will continue to act as professionals even after they are employed full time.

There is no current evidence that these assumptions are correct, but the last is a point of great concern. All of us have been brought up as professionals. I define a professional as an individual who does the job independent of how long it takes. An employee has a temporal relationship with the subject that he or she is dealing with. At 5:00 P.M., someone else comes on. Thus, a purported relationship with a patient by a physician who is an "employee" may be difficult to sustain. Furthermore, I believe that the experience with the National Health Service has indicated that physicians who are brought up and educated as employees cease to act as professionals once the cadre of physicians who have been trained as professionals leave the system. In 1948, when the National Health Service was organized, a large number of physicians were in the system who had practiced and been trained as professionals. They started retiring in the early 1970s. It may be more than simple coincidence that since that time the National Health Service has been in disarray, as individuals who have been brought up as employees have acted as employees. They don't want to stay on at night, even for overtime; consequently, accident floors are in short supply. A serious head injury in one of the largest cities in England may require more than an hour of ground transportation before reaching care. This is not an experiment that needs to be repeated. Those individuals who wish to repeat it should pay attention to the fact that one of the fastest growing industries in England is private health care. No, there is no assurance that physicians who are employees will act as professionals rather than "nine-to-fivers."

Ethical Dilemmas

The physician's dilemma with respect to managed care is simple—the physician has always had the responsibility to the patient; that is the way we have been brought up and the way we think. Our contact has always been with *the patient.* We were brought up to think that we must do the

best for the patient, independent of what the costs are. Yes, there is waste. Yes, we could be more careful. Yes, we probably could do a little better at not spending as much on patients who are terminal. However, the retrospectroscope is a wonderful instrument, and it is easy to see, after the demise of the patient, that we spent a lot of money in the last six months of their lives. The prospectroscope (identifying patients who are in the last six months of their lives) smells of euthanasia and of eugenics, a practice that is undergoing some reexamination in Holland and that is abhorrent and foreign to most American physicians.

The physician as the patient's advocate is as old as the profession itself. In primitive societies, the life doctor and the death doctor were the same—that is, the witch doctor. Witch doctors both healed people and "put people to death" by putting curses on them. If a rival wished to discomfort his enemy within the tribe, he stole an article of clothing or some personal object and gave it to the witch doctor, who then boiled it or did something terrible to it, thus "cursing" the subject and making the subject quite ill. About six millennia ago in Egypt, the two functions separated. Priests became the death doctor, while physicians took on the function of the life doctor, of the patient advocate.

The American College of Surgeons was founded on patient advocacy, and patient advocacy remains the most cherished tenet of the philosophy of the College. In managed care, physicians have the responsibility to be patient advocates. The problem in managed care is that physician advocacy of the patient runs up against the rationing of health care and the denial of benefits. Utilization review is done by others (hopefully, not high school dropouts). This practice is particularly true and ethically repugnant when the gatekeeper concept rewards primary care physicians for depriving or denying services. Furthermore, the ethical question is blurred. Is the implied physician/patient contract still existent when the contractor is an insurance company and the physician's contract is with the insurance company? Is there a modification of the traditional physician/patient relationship in the era of managed care? Does the patient have a physician? Is the physician just one of a group of people who rotate in and out of examining rooms on a schedule, caring for the immediate needs without really getting to know the patient? All of these practices are currently occurring and have shaken the tradition of medicine to its roots.

The classic problem in a physician caring for a patient usually takes the following guise: You believe a certain service is required for the maintenance of the patient's health. Assume this service has been denied by what you feel is inappropriate utilization review. Is your responsibility to the patient or to the contracting entity? To frame it specifically in legal terms: Is there still an implied contract between physician and patient in the managed care organization? Further, this is complicated by the fact of the physician stating, as it were, "If I don't make the decision, why do I continue to get sued?" As for the physician, the courts have been very clear on this point. They have stated indelibly that the physician/patient contract is still extant, independent of the company, and that the physician's responsibility is primarily to the patient and not the contracting organization.

ERISA and the Courts

Before proceeding to discuss the decisions of the courts of law, it is worthwhile defining the terms of ERISA, the Employee Retirement Income Security Act of 1974, as amended for 24 HMOs, employers, insurers, and providers. What ERISA states is that if a company is acting within ERISA guidelines (which comprise all provider-based plans) this situation preempts state law, including the professional liability law. Several landmark cases have been argued and decided, and form the basis for our current legal thought. *Corcoran vs United Health Care* (956F2D 1321, Fifth Circuit Court of Appeals, 1992) ended a series of cases beginning with *Wickline vs the State of California* (192 California Appellate 3rd 1630, 1986). *Corcoran* deals with the question of liability risks to a plan sponsor that adopts utilization management. The decision by the United States Fifth Circuit Court of Appeals was that the plaintiff could not recover damages for an allegedly flawed utilization review decision. In *Corcoran,* the patient had a difficult pregnancy. The physician sought an inpatient stay, which was denied. Instead, United Health Care authorized 10 hours/day of in-home nursing care. During the nonstaff-time, the fetus died of fetal distress. The plaintiff sued, arguing wrongful death, and claimed that United Health Care made a medical decision and therefore was liable under the terms of professional liability. United responded that its decision was not a medical decision, but only a fiduciary decision about the extent of benefits. The court held that this was a "medical" decision, but only in the context of the determination of the availability of benefits.

The index case, however, as far as physician's responsibility, is that of *Wickline vs the State of California.* In *Wickline,* the patient underwent an aorto-iliac graft, developed postoperative problems, and required additional vascular surgery. Finally, a lumbar sympathectomy was done, presumably in desperation, as most are done under these circumstances. The utilization reviewer insisted that the patient be discharged four days postoperatively. The physician argued for an additional four days of postoperative care. The patient went home in four days and, apparently, the physician did not protest. Amputation was the result. The patient sued the state of California, and the

Court of Appeals held for the defendant. Nonetheless, in the California Court of Appeals decision, the following paragraph appears:

> The physician who complies without protest with limitations composed by a third-party payer, when his medical judgement dictates otherwise, cannot avoid his ultimate responsibility for his patient's care. He cannot point to the health care payer as the liability scapegoat when the consequences of his own determinative medical decisions go sour. (California Appellate decision).

On the other hand, *Wilson vs Blue Cross of California (222* California Appellate 3D 660) used *Wickline* to indicate that the managed care organization could share the liability for negligent utilization review, and that the liability is not exclusively that of the attendant physician. Again, in *Wilson,* the appellate court held that the sole liability for improperly discharging the insured could not be placed on the physician, as there was substantial evidence that the claims review agent was a significant factor in inappropriate discharge.

Thus, the physician's responsibility continues to be to the patient. The horns of the dilemma for the physician, and especially the surgeon, are as follows: The insurance company, for the most part, will be protected by ERISA. The physician is obliged to protest. How much of a protest is a protest? Is it sufficient to write a note in the chart that you disagree with the utilization review and that it is tantamount to malpractice, or does one have to write a letter? This question has not been clarified by the courts. On the other hand, repeated protests in the interest of good medical care may show up on the screen at the time when contracts are being renewed. The surgeon may be told, for example, that whereas other surgeons practicing in the same area had but three irregularities with respect to medical care, this particular surgeon's irregularities amount to 15, and thus the contract will not be renewed. If you protest, you may get fired; if you don't protest, you may get sued, and you certainly will not carry out your responsibility to the patient. The alternative is for physicians to band together to obtain reasonable working conditions and reasonable conditions for their patients.

Because of antitrust, physicians cannot band together to negotiate for indemnification, conditions of employment, responsibilities to their patients, or their ability to protest inappropriate utilization review decisions unless they share in the risk, in which case they are exempt from antitrust. Certainly we will see some evolution in this area over the next several years. However, the Employee Retirement Investment Security Act of 1974, as applied to HMOs and PPOs and insurance companies, makes certain that every employer-initiated plan is protected from a professional liability suit from the standpoint of inappropriate utilization review. Thus, the responsibility will continue to fall on the physician. As we are hampered by antitrust, the scales are tipped considerably in the direction of the insurance companies and not toward the physician.

Nonetheless, on a historical and ethical basis, the responsibility of the physician and, specifically, the surgeon, is to the patient. One cannot undo the underlying philosophy of medical care merely because of an evolution in the cost structure and in the mechanism by which physicians are paid for services. The tenets of the physician's responsibility to the patient are clearly established and have stood the profession in good stead over the past six millennia. The advocacy of the patient, a cherished tenet of the American College of Surgeons, is also among the highest principles and is perhaps the most recent excellent representation of the Hippocratic Oath. The physician must remain the patient's advocate. This tenet is true on a historical, moral, and ethical basis. We must remain constant to this ideal, independent of harassment, discomfort by inappropriate utilization review, and greed.

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In Defense of Freud

As a medical student, I immortalized myself with my classmates when I informed a lecturing psychiatry professor that I considered Freud's theories slightly more credible than the nuns' tale about guardian angels. The lecturer ignored my obnoxious comment and continued his lecture. But, Freudians have been on the defensive for the past decade. This trend culminated when the Library of Congress was forced to cancel a tribute to Freud in the name of political correctness.

Freud has always been viewed with suspicion by cultural conservatives. Freud rejected the concept of sin and explained abhorrent behavior in terms of unresolved conflicts among competing brain factions—id, ego, and superego—that stemmed from childhood experiences. His treatment was to delve into an individual's childhood and attempt to resolve these conflicts—psychoanalysis.

But it wasn't pressure from the religious right that canceled the Library of Congress tribute; rather a combination of feminists and neuropsychiatrists. Freud theorized that unflattering female behavior could be attributed

to "penis envy," a *verboten* concept in the age of political correctness. But what is truly destroying Freud's credibility is the exploding field of neuropsychiatry.

While medicine has made exponential advances over the past century, the fundamental physiological function for many organs has been understood for centuries. The heart pumps blood through the body by contracting. The stomach sucks nutrients out of food and produces waste. The tongue facilitates speech. But the brain is a whitish-gray blob. How does it allow us to reason, lose our temper, or fall in love?

It wasn't until the advent of a 20th-century invention that scientists were able to conceptualize the brain. The brain is a computer, perhaps one that is almost infinitely complex, but a computer nonetheless. Through our senses, the brain takes input from the environment, processes it through a multibillion unit network of wires called neurons, and returns a response.

Once this is understood, it is obvious that an individual's behavior will vary according to the brain's wiring. This wiring is determined to some extent by the blueprint given to us by our parents, our DNA. Thus, we are inundated with breakthroughs, practically on a weekly basis, as to how some behavior patterns may have a hereditary basis. Researchers have located genes that may be associated with risky behavior, obesity, and sexual orientation.

But our brains are constantly being reprogrammed by our experiences. We learn that making obnoxious comments to our teachers can result in a lower grade and that picking fights with guys who have tattoos can result in large dental bills.

The genius of Sigmund Freud was that he conceptualized how the brain works without ever hearing of a computer or of DNA. He also understood that trying to resolve our fears and irrational behavior through therapy was better than resorting to violence or substance abuse.

Neuropsychiatrists who prefer Prozac, Xanax, and Elavil to psychotherapy miss the point. Yes, these drugs alter the brain chemistry, but on a primitive level that is poorly understood. Furthermore, what happens to the brain chemistry with psychotherapy? When a patient alters his behavior in response to a psychiatrist's analysis, a biochemical change in the brain is occurring too. A patient who decides to be more assertive has, one way or another, altered the biochemical structure of his brain. It doesn't happen by magic! Physicians can debate the relative efficacy of each approach, but they shouldn't completely discount the value of psychotherapy.

Like Columbus, Freud has been subject to the vicissitudes of public opinion. It is true that Columbus was an intrepid explorer who began the exploration and colonization of the Americas. It is also true that as governor of Hispaniola, he butchered and brutalized the Arawak Indians who would not consent to being enslaved. Freud's personal life was less than perfect. He manipulated patients to obtain contributions for his research. He fell asleep and wrote letters during therapy sessions. But in spite of his flaws, Freud made the quantum leap required to treat brain disorders in a rational manner, and in the long run, he will be given the credit that he is due. His guardian angel will see to it.

Joseph F. Bentivegna, M.D.

Rocky Hill

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Manchester Journal Inquirer

Primary Care and Managed Care: Where Do We Go From Here?

Some of the ways that managed care has influenced primary care are good.

First, it has reintroduced primary care back into the mainstream of medicine. Second, it has called for changes in residency training, including better preparation of primary-care doctors for cost-effective practice. And finally, it has stressed the need to improve continuing education for primary-care doctors in practice.

Indeed, it might have been years before organized medicine, including academic medicine, mobilized to address these issues with equal determination, given their preference for research in biomedical science over research in medical care delivery.

In fact, every major study of the health-care needs of this country undertaken for the past several decades has consistently recommended the need for more general practitioners, or primary-care physicians. Yet it wasn't until the forces of managed care prevailed upon organized medicine that it began to examine these issues seriously.

However, there are other aspects of managed care's philosopy that many physicians question—the most problematic being the gatekeeper concept that encourages and rewards primary-care doctors for not referring patients to specialists.

Many physicians, generalists as well as specialists, feel that there is something inherently wrong in this policy that shunts patients away from specialists to save money. Preventing patients from seeing specialists who have the necessary training and expertise to help them is unethical. It may cause patients to suffer needless anxiety, delay their

recovery, or even result in their death. Furthermore it deprives specialists of opportunities to use and improve their skills.

Any health-care system built on such shaky ethical practices surely cannot endure for very long. Americans consider essential health care a right, not a commodity, and they demand the very best from their health-care system. As one testimony of this, Americans have the highest incidence of malpractice litigation in the world. More importantly, until recently they believed they could trust their physicians.

Perhaps specialists need to be retooled not as *generalists,* but as *specialists with a higher threshold for performing sophisticated procedures.* However, for this to happen the legal climate will have to change. Undeniably, the threat of malpractice has created a *legal imperative* that virtually compels physicians to practice costly defensive medicine.

Unfortunately, now that primary-care physicians have allowed financial incentives, such as risk pools and withholds, to enter into the doctor-patient relationship, their integrity has become compromised, trust has been lost, and they have provided the legal profession with new and powerful weapons. In fact, lawyers are already bringing actions, perhaps justifiably, against HMOs and primary-care doctors because of *utilization review failures*—a term they employ when representing patients who blame their bad outcomes on the denial or delayed approval of consultations or tests.

So, whether warranted or not, keeping patients away from specialists may have serious consequences. And when actions claiming utilization review failure are brought against doctors, they lower doctors' thresholds to practice defensively even more.

Exactly how much defensive medicine increases the cost of medical care is difficult to estimate, but since most doctors would agree that the practice is common, the increased cost must be great.

In their resolve to control the cost of health care, managed-care strategists must balance their fervor with the realization that the practice of medicine is first and foremost the practice of a profession, not a trade. And as costly as medicine may be, its practitioners try hard to be fair in giving everyone uniformly high quality care.

This contrasts sharply with the marketplace—which were it driven by the same values which drive medicine, would seek to provide every American with a Cadillac and a luxurious home. And as the economist Eli Ginzber, recently pointed out, what can managed care do to take care of the 40 million uninsured in this country?

To be sure, our health-care system needs to conserve resources and use them more wisely and justly in the provision of care. Managed care needs to concentrate its efforts on one of the most misused resources of all—primary-care doctors' time. Other countries' health systems have given this issue top priority. Our health-care system can profit by studying the ways in which primary-care physicians are deployed.

In Japan for example, primary-care doctors are strictly office-based and do not take care of hospital patients, whereas specialists are hospital-based. Similar divisions of the physician workforce exist in Germany and the U.K.

The Japanese system in particular deserves a closer look because it has achieved success in three critical areas: cost containment, universal coverage, and the freedom to choose one's physician.

How much the separation of their workforce into office-based primary-care doctors and hospital-based specialists contributes to Japan's success needs to be studied. Here some HMOs are already experimenting with it. Eliminating the travel time to and from the hospital and rounding on patients would save primary-care doctors several hours a day. This is a significant amount of time that primary-care doctors could use more effectively caring for patients in the office.

Whether the annals of history will record managed care as a fleeting and misguided attempt at health-care reform, or as a better and more humane system of health care will depend on how well it can respond to the challenges facing it today. Managed care's inventory of strategies for future success must include keeping the doctor-patient relationship free from contamination with financial incentives; keeping open the lines of communication with the legal profession; and deploying primary-care doctors effectively.

If these challenges are not met, the chances are good that the practice of medicine in this country will lose its honored role as the most humane of the sciences.

Edward J. Volpintesta, M.D.
Bethel Medical Group, P.C.
Bethel

Coping with Undecipherable Consultations

Although doctors' illegible handwriting is legendary, few practitioners make an effort to improve it. By and large, hospital nurses have assumed the role of translators, a task sometimes as daunting as the interpretation of the Rosetta Stone.

Herewith I submit an example of an actual consultation, as I read the cardiologist's handwritten note:

"Patient seen and full note to be dictated.

"Decimated retired attorney admitted because of spine of C.P. assorted with increased BP. That oeuvre after lunch today has him grandiose bypass that was complicated by a CVA but he has been doing well in the nursing wring.

"His diameter provides an auricle of history and I spoke to his R.N. today. She spots he was "wise" this a.m. and walk out wheats. After home, he surprised the C.F. ass or BP to 170/104. There have been no other reported operations of C.P. He has an arc murmur of MP today.

"Patient is cooperative but is vaguely optical (ie, putting on retinoids.) Chest: bellicose rales up 1/3. Cor: II-III/VI (O) MRD but no RUT. TUP is relieved to the gain when he's up at 20°. EKG: RBBB, hot Q waves, LAH, LAA, less flu; tie ion, CHF with any sultan.

"Imp:

1. ASHD—? unstable caper *vs* MI.
2. Papillary momentum dysfunction due to ischemia, ? repulsive.
3. CHF.
4. Hyperten by etiology.
5. H/O CVA with finger disaster.
6. OBS with dyspareunia.

"Rec: Condensing his age, problem his papers is poor. Will give Lasix to decrease pullout, increase Capoten to help aftercoat radiation and use nitrates to cattail ischium. If vasopen reserves, could smelt to ICU as is or even consist with swan-Ganz give. He has a boring wife and it is difficult to deleterious how far to go. I've been unable to revel with his wife in Fla.

"Thank you for the consumption."

With effort (and the nurses' assistance), I was able to decipher the major portions of my colleague's endeavor. Actually, I was too embarrassed to call him myself and ask for clarification. Fortunately, the patient recovered. My solution? Wait 24 hours for the typed consultation. This works every time. My advice to consultants with poor handwriting? Print.

Peter Gott, M.D.
Cardiovascular diseases
Lakeville

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the two sets of hard copy.

Please send them to:

Robert U. Massey, M.D., *Connecticut Medicine*
160 St. Ronan Street, New Haven, CT 06511

The Physician as Artist

The New York Times, Sunday, April 23, 1995 review by Vivien Raynor, art critic. The Annual "Connecticut Art" Show at the Stamford Museum and Nature Center: "But for sheer magnetism there is nothing to equal "Carolyn Koffler, M.D., Dr. Ph," a portrait by Arthur Koffler. Although the drawing, particularly the eyes and mouth, is first-rate, it is the almost fauve color applied in small dabs that holds the viewer enthralled. Just as remarkable is the artist's response to a model who is far from young. Where some would turn her into a picturesque senior citizen, Dr. Koffler portrays her as a dynamic personality 1st and an elderly woman 2nd."

50 Years Ago

From *The Connecticut State Medical Journal*

March 1946

The Newington Home for Crippled Children

THE Newington Home for Crippled Children owes its beginning to the foresight and the tenacity of Mrs. Virginia T. Smith who was both a public spirited woman and an inspiring leader in social progress. Virginia Smith also was the mother of Oliver C. Smith, one of Connecticut's great surgeons.

In 1892 Mrs. Smith was instrumental in the establishment of The Connecticut Children's Aid Society. The purpose of this society was concerned with the care, study and placement of children from broken homes. For attractive children placement presented no problem but it soon became evident that many children were unacceptable. It then became Virginia Smith's ambition to provide a home where crippled children could be given the care and attention they needed.

In 1894 such a home was opened in Wethersfield, but it was objected to by the neighbors and by vote of the Town it was discontinued. Another tract of land was acquired in Wethersfield and though it was satisfactory to the townsfolk the project was abandoned because of the unsuitability of the location.

Mrs. Smith then secured in the town of Newington a small white farmhouse and about 50 acres of farm land. The people of Newington agreed to its use and on June 15, 1898 the "Home for Incurables" was opened with 10 children in residence. Within a year another building was added and gradually, between 1898 and 1915, there were built a boy's house and a girl's house, a house, a hospital and a school house.

Unfortunately for the progress of the "Home" Mrs. Smith died in 1903 and as soon as her hand relinquished its hold the "Home for Incurables" became a static organization and lost inspiration, purpose and direction. From 1903 until 1917 it was largely used as a dumping ground for almost any age or type of person for whom no other haven was available. No one deplored this unfortunate outcome of Virginia Smith's dream more than her son Oliver C. Smith. Before his death he therefore, arranged with Ansel G. Cook that Newington should be reorganized and again set upon the path towards the destiny for which it had been created.

Dr. Cook undertook this congenial enterprise with characteristic zeal. One of his first steps was to secure the interest and collaboration of Mrs. John H. Buck of Hartford who proved to be invaluable in the enormous task of rebuilding the home. Able technical assistance was provided by Dr. Charles Page of Hartford and by Dr. C. Charles Burlingame then of Manchester and later the head of the NeuroPsychiatric Institute. Through the combined efforts of this group of indefatigable leaders and organizers plans were undertaken to develop the hospital side and to modernize the physical plant as well as to reestablish the progressive outlook towards handicapped children which had guided Virginia Smith in her efforts.

Constance Leigh, a graduate of the Hartford Hospital, was the wise choice of the energetic group for the superintendent and with her appointment there began a reconstruction which has never ceased to produce results. The board of directors decided to accept as patients only children of normal intelligence. The mentally defective were discharged and the use of surgery for physical defects was vigorously undertaken. In nothing has the

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Reprinted from the *Connecticut State Medical Journal*, March 1946, in part from *Notes on the History of Orthopedic Surgery in Connecticut* by Paul P. Swett, M.D., Bloomfield.

wisdom of the choice of Constance Leigh been more positively shown than by her genius in handling children and in her vigilant care to protect the integrity of each individual against mass management and the graver defects of institutionalism.

In 1920 the home was separated from the Connecticut Children's Aid Society and in place of the Home for Incurables it was incorporated as The Newington Home for Crippled Children. In 1921 the legislature made a generous grant for new buildings. Two-thirds of the program being completed in 1924 it became possible to provide the facilities of a modern kitchen, wards, dormitories and operating rooms. It also became possible for the superintendent to sleep nights without fear of what fire might do in old wooden buildings where handicapped children were housed on the third floor. The present buildings were completed in 1930 and they were formally dedicated in impressive ceremonies presided over by President Roosevelt, then Governor of New York.

The Newington Home now is a thriving institution which ministers to crippled children from all parts of the State. It is administered by a board of directors and it is supported by money derived in part from the interest on its own funds and through grants from the State, together with voluntary public contributions. There now is an average census of 187 patients in residence and in the outpatient clinic there are over seven thousand annual visits.

Editorial: Connecticut and the Founding of the American Medical Association

ON May 5, 1846 at the organization of the National Medical Convention in New York the first chairman of the Convention was Dr. Jonathan Knight of New Haven. In the next year at Philadelphia Dr. Knight was again elected chairman, and it was at this time that the plans for the organization of the American Medical Association were completed. The American Medical Association was essentially the same organization under a different name and in the minutes of the meeting for May 7, 1847 it was stated, "That the officers of the Convention continue to act as officers of the Association until others be appointed ..." Thus it was that Jonathan Knight actually served as the first presiding officer of the American Medical Association.

The following brief outline of his life was prepared by a member of the editorial staff.

Dr. Jonathan Knight, the first chairman of the National Medical Convention, was, for fifty years, "The Beloved Physician" of the town of New Haven. Born in Norwalk, the son of a physician, he graduated from Yale College in 1808 and studied medicine with preceptors while teaching school in Norwich and New London, and as a tutor at Yale. During the winter of 1809-1810, plans were being completed for the establishment of a Medical Institute at Yale College and in those days, the young and vigorous country had faith in its young and vigorous men. So Benjamin Silliman, a professor at the verdant age of 23, approached Knight that winter, suggesting that he resign his tutorship and spend a winter or two in Philadelphia studying anatomy and physiology at the University of Pennsylvania. This Knight did and in 1812, at the age of 23, was appointed assistant professor of anatomy under Dr. Mason Fitch Cogswell of Hartford, professor of anatomy and surgery. Evidently Dr. Cogswell felt it inadvisable to leave Hartford to accept the chair, and Dr. Knight was then promoted to fill the vacancy.

As a teacher and physician, he early became aware of the lack of teaching facilities in the Medical Institute and was, therefore, one of the small group who, in 1826, organized the General Hospital Society of New Haven County. The need for such a hospital must have been very clear, for the members of the Medical Institute pledged 10 per cent of their incomes to the Hospital Society, providing that sum did not exceed $100 a year. After some tribulations, in 1829, "a fine site and ample grounds were purchased and a commodious hospital structure of liberal proportions was erected thereon." This was the beginning of the New Haven Hospital.

In 1838, on the death of Dr. Thomas Hubbard, Dr. Knight was transferred to the Chair of Surgery in the Medical Institute. Shortly after the beginning of the Civil War, when Knight was over 70 years old, the New Haven Hospital was taken over by the Federal Government and designated as "The Knight United States General Hospital." This was a fitting climax to a long and successful career dedicated to the service of his community.

Reprinted from the *Connecticut State Medical Journal*, March 1946.

Doctor—

INFORM YOUR PATIENTS!

WE CONNECTICUT PHYSICIANS oppose the Wagner-Murray-Dingell Bill because:

(1) it would cost an exhorbitant amount, and comparatively, would be financed by those in the *lower* income brackets; and

(2) it would deprive the people of their free choice of physician, and destroy FREE ENTERPRISE IN AMERICAN MEDICINE.

"What would be the cost of the Wagner-Murray-Dingell Bill to the wage earner?"

Wages per month	*Tax per month*	*Employers' tax per month*	*Cost per year*
$100	$4	$4	$96
200	8	8	192
300 and above	12	12	288

Self-employed—5% of income

The greater proportion of the money assigned for medical care would not go to physicians to encourage better medical service, but toward administrative expenses. Under the British Compulsory Sickness Insurance scheme, 12.5% of the funds go to physicians, and over 80% toward administration. In the British (voluntary) Insurance "Clubs," 80% goes to the physicians, and only 20% to overhead.

"Why would free choice of physician be limited?"

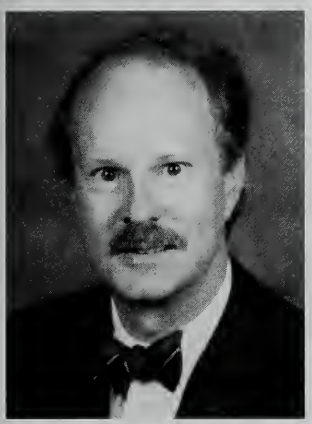
To use this compulsory insurance, people could select a doctor only from among those physicians who consent to serve under the government plan, and 90% of the physicians do not want to do so. Such a system would result in overpayment for inferior services. It would result in the destruction of FREE ENTERPRISE IN AMERICAN MEDICINE!

WE CONNECTICUT PHYSICIANS BELIEVE THAT VOLUNTARY PREPAYMENT MEDICAL AND HOSPITAL PLANS BRING PROTECTION FROM THE CATASTROPHE OF ILLNESS AT LESS COST THAN THAT PROVIDED BY THE GOVERNMENT, AND WITH RETENTION OF FREEDOM FOR BOTH PATIENT AND PHYSICIAN.

The best public relations man that medicine ever had was the horse-and-buggy family doctor. As the family counsellor, consoler and friend, he established the finest possible public relations,

You are his successor in modern medicine. Your State Officers and Committee Members can only be helpers to you. In your daily contacts with your patients, tell them what organized medicine wants and why.

Genes and Behavior



Western philosophy has traditionally distinguished man from animal by the faculty of reason. From Plato's "Knowledge of the Good" to Descartes' " *Cognito, ergo sum,*" the ability to think has been the defining human characteristic.

From thinking comes choice; from choice action. And from action comes responsibility. Thus, we are what we do. That is how we judge ourselves, and others judge us.

Of course, it's not that simple. We know that choice and action can stem from factors besides reason. Mental illness, such as psychosis or severe depression, impairs judgment and leads to irrational acts. Virtually all societies recognize the distinction between acts of criminality and acts of insanity. Those afflicted by such illness are relieved from responsibility for their behavior.

Subtler mood disturbances are more problematic. For example, both endogenous and exogenous hormonal disorders have been blamed for unlawful acts. Successful criminal defenses have turned perpetrators of violent crime into victims of steroid chemistry. Just what constitutes personal responsibility has been blurred by an alchemy of carbon rings and legal sophistry.

Now researchers have identified genetic influences on choice and action. As reported in *The New York Times*, variations in the gene coding for the dopamine receptor can lead to exaggerations of common personality traits. Individuals with such differences are more likely to be "impulsive, quick tempered, fickle, curious, and extravagant" than control subjects.

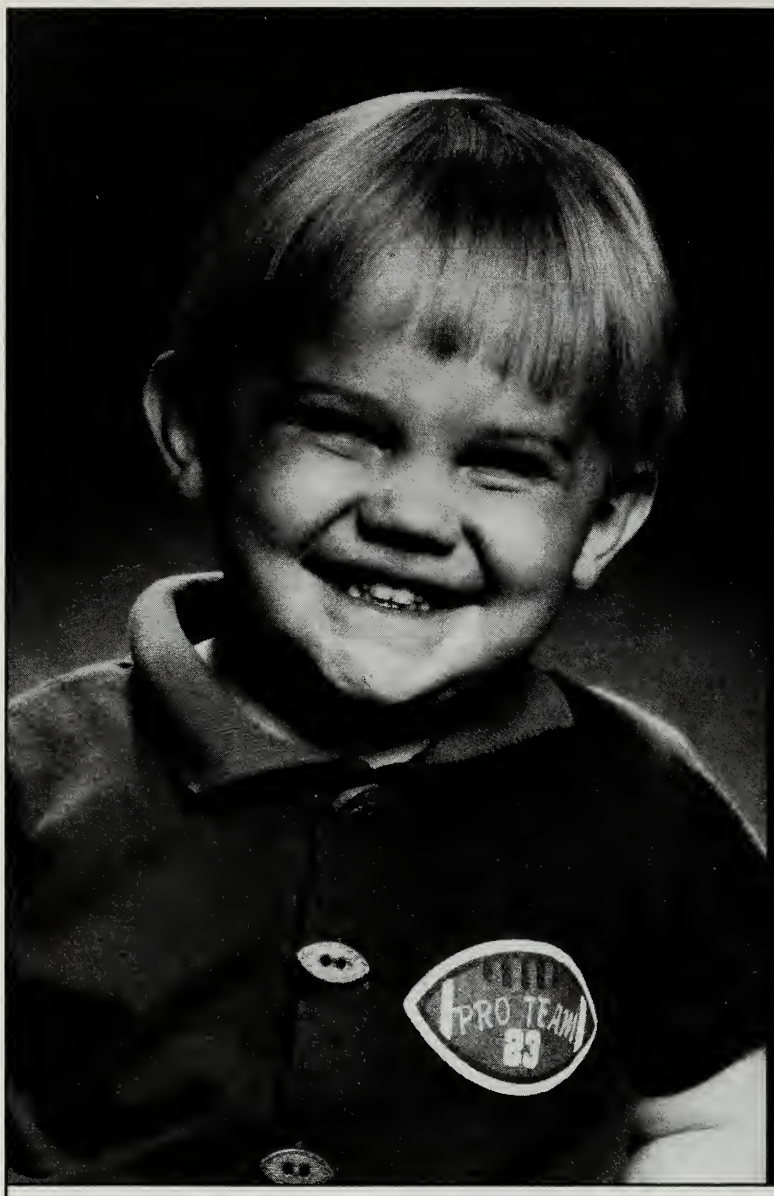
While no one is saying that all human behavior is genetic, it is likely that more such genes will be identified in the future. How will these discoveries affect our concept of free will? Will we accept the responsibilities of our deeds or abdicate to the predeterminism of our DNA?

Take alcoholism for example. Already it is recognized as a legitimate medical illness, not a defect in character. Identification of an "alcoholic gene" will provide an explanation for this addiction. Will it also provide a defense for DUI violations or spousal abuse? What about the criminal acts consequent to narcotic or cocaine addiction? Will they be condoned by the discovery of genes for these addictions as well? Or suppose we find a "violence" gene, perhaps regulating the metabolism of some unknown biogenic amine. If such a mutation can translate anger into manslaughter, is the perpetrator criminal or victim? Newly discovered genetic explanations for behavior will join the sociological ones already in vogue. Decades of nature-nurture studies have demonstrated the impact which environment can have on conduct. The corollary is that deficiencies in our societies can also excuse our actions. That's what the Jets told Officer Krupke(in *West Side Story*). And that's what the Menendez brothers are saying today.

Is our freedom to choose and to act thus illusory, nothing more than a random collection of base-pairs moulded by our environment? And since we can pick neither our genes nor our society, where does our freedom lie? Will it be what remains after the geneticists and sociologists are finished?

Philosophers will be busy.

Dickerman Hollister, Jr., M.D.
President



A is for Apple,

B is for Ball,

C is for Cancer.

Cancer?

Each year, more than 6,000 children like Adam learn all about cancer and other catastrophic illnesses when they're stricken with deadly diseases. Fortunately, these children have a fighting chance at surviving cancer — the No. 1 killer disease of children — because of strides St. Jude doctors and scientists are making every day in treatment and research. With your support, St. Jude Children's Research Hospital is helping children all over the world live.

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St. Jude Hospital • P.O. Box 3704, Dept. DA • Memphis, TN 38103, or call:

1-800-877-5833

ST. JUDE CHILDREN'S RESEARCH HOSPITAL
***Danny Thomas**, Founder*

Selective Memories a Half Century Old

ROBERT U. MASSEY, M.D.

FIFTY years ago this month I graduated from medical school. So did 6,200 of us in that final war-time class that had finished four years of medical education in 36 months. Internships began the first of April 1946 and ended 30 June 1947—15 months which was our great good fortune. For many in that class this would be the end of their graduate medical education; residency positions nationwide were open to only about two thirds of that group. Most had to defer further postgraduate training anyway until 1949 in order to serve their mandatory two years in the service.

The war had ended eight months earlier and most of the younger full-time hospital staff were out of uniform and back at work, full of new ideas and quite clearly taking over the place from those who had been too old, in their late 50s and early 60s, to go off to another war. The Henry Ford Hospital in Detroit was jumping with new technology. Penicillin had mostly replaced sulfadiazine and type-specific rabbit serum in the treatment of pneumonia, and streptomycin and para-aminosalicylic acid (PAS) were being used in the TB ward. A new division of infectious diseases was created in the department of medicine.

I had to relearn how to digitalize a patient: no longer 16 to 20 grains of digitalis leaf divided in the first 24 hours, 1 to 2 grains daily thereafter, but rather 1.2 milligrams of digitoxin to start, and 0.1-0.15 daily. Morphine was still ordered in apothecaries' units, 1/4 or 1/6 grain, but demerol came in milligram doses. Barbiturates, aspirin, and aminophyllin in grains, mercuhydrin in milligrams. An Addisonian crisis was treated with whole ox adrenal extract IV and desoxycorticosterone in oil intramuscularly. The laboratory still reported serum potassium and sodium in millegrams percent, although the flame photometer came into use that year, and soon we were thinking in milliquivalents, and worrying about fluid and electrolyte balance, thanks to the pediatricians.

A young pediatric cardiologist had been sent off to Johns Hopkins to work with Helen Taussig and to learn how to catheterize hearts. Sometime that summer as a medical intern I was tolerated in the operating room as Conrad Lam (Yale Medicine Class 1932) performed the first Blalock-Taussig operation in Michigan on a young girl for tetrology of Fallot. Incidently, two years later Dr. Lam put together the first artificial kidney in Michigan, fabricating it from the parts of an Easy washing machine. It worked.

About that same time ball-point pens appeared on the market for 18 dollars, the per diem charge for a private hospital room! My wife and I had had our order in for a new postwar Chevrolet for months; these were the first ones out since '42, and ours arrived in November 1946. The cost, 1,040 dollars, seemed unbelievably expensive for a Chevrolet; a standard Chevy had been only about 600 dollars before the War. Our car was a virtual singularity, a '46 GM car, in a staff parking lot filled with Fords, Mercurys, and Lincolns, mostly prewar—the "Ford Fine Family of cars."

Medical and nursing care was excellent and equal in quality throughout the hospital, but there were clearly four tiers of amenities: African-American, colored was the word then used, motor plant workers and compensation cases, the large middle class, and the Grosse Pointe or Palmer Woods crowd admitted to the gold coast, B2, where tea was served from a teacart in the afternoon, and a favored few, members of the Ford family, Walter Reuther, a supreme court justice, and others of like rank, might even have spiritus fermenti oz. ii to iv ac the evening meal. Racial segregation had been slowly loosening its hold in the hospital, especially since the 1943 riots and the increasing numbers of black workers in the auto plants during the War. More and more middle-class African-Americans were admitted to hospital floors other than the M3 unit to which they had typically been assigned.

In the TB unit, M2, we learned to initiate and refill pneumothoraxes (or is it pneumothoraces?), check our results fluoroscopically, and follow with interest and more than a little skepticism the few patients who were receiving strep and PAS. In the long winter afternoons during the TB rotation, while the patients slept, or pretended to, I read, stretched out in an old Edwardian leather-upholstered reclining chair. Medical journals, of course, but I do recall some of the books I read that month after finishing the *New England Journal*: John Hersey's *A Bell for Adano*, Arthur Hertzler's *The Horse and Buggy Doctor*, Blaise Pascal's *Pensees*, and John Henry Newman's *Apologia pro Vita Sua.* The house staff organized and presented the cases for the weekly chest conferences and

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

we learned about the indications for phrenics, pneumos, and thoracoplasty when all else failed.

It was at a Friday morning medical grand rounds that I heard Dr. Frank Sladen, the physician-in-chief, refer to hospitals, such as the Henry Ford Hospital, as public trusts whose sole reason for being was to serve the sick; he said we must never forget that. He also urged the economical use of the laboratory, reminding us that three blood chemistries might equal a salesclerk's weekly wage. My first presentation involved a case of typhus; I still have the notes in which I attempted to explain the Weil-Felix reaction, and read a few paragraphs from Hans Zinsser's *Rats, Lice, and History*.

Lunch was served in two elegant dining rooms. A private one for the medical staff, another for the housestaff, with residents sitting at tables for four, and interns at one long table, all with spotless linen, real napkins, ice water pitchers, and the best salt rolls I've ever tasted. We could bring our wives or a guest on holidays and Sundays. Absolutely no smoking, there or anywhere in the hospital or on the grounds, until after Mr. Ford died in 1947, and even then lighting up was furtive, usually out on one of the porches or on the roof.

We got our haircuts in the hospital barber shop, and our cars serviced, and washed in the hospital garage! I even bought Ford coke, produced at the Dearborn plant, for our furnace at home. We got our medical and dental care there and even did our banking at the branch in the hospital lobby.

We failed to appreciate how much we were learning by being privileged to watch diseases from beginning to end. Nationally the average hospital length of stay in the mid 1940s was 14 days. We saw untreated Graves' disease melt under sedation and Lugol's solution. We recorded the patient's course, aided by an occasional BMR, until the surgeon, internist, and house staff all agreed that tomorrow was the day for the subtotal thyroidectomy, to steal the thyroid! Hospitalization for serious illnesses like hyperthyroidism was for at least a month, and even longer for patients with ulcerative colitis, rheumatoid flare-ups, rheumatic fever, and acute myocardial infarction. This last involved oxygen by tent (a liquid oxygen tent invented at the hospital in the 1930s), morphine, and then barbiturate sedation, and complete bed rest for 10 days, no radio, no newspaper, no visitors except immediate family, and, for alternate admissions, dicumarol with daily prothrombin times. We were part of a multi-institutional study. The intern examined a centrifuged urine sample daily for red blood cells. The patient might "dangle" after two weeks, but never go home until the seventh week. Lots of time to get acquainted, time to learn the course of disease and its effect on the family, time to form friendships with the patients and have long conversation with families.

Medical interns were required to serve one month on the psychiatric unit, F1, an open ward modeled on the inpatient units of the Phipps Clinic at Hopkins. Dr. Thomas Heldt, the psychiatrist-in-chief who had trained under Adolf Meyer, made rounds vested in a white coat, as did all other staff physicians and residents, a stethoscope and reflex hammer in his pocket, and a little bag with a blood pressure cuff, ophthalmoscope, and assorted neurologist's paraphernalia. Like all staff physicians at the hospital, he dictated his progress notes to the intern after seeing each patient. He also checked all of the intern's physical examination findings, and made sure that sinus, dental films, and occasionally a Graham-Cole series (cholecystogram) had been ordered to check for foci of infection. Following rounds came electroshock therapy rounds, and occasionally the administration of insulin for the induction of hypoglycemic shock. Some patients underwent a two-week amytal sleep—*Dauerschlaf*, after which they were placed for a day or two on a mattress and bedding on the floor and "reconstructed" their personalities! Since the psychiatric floor was an open unit, the nurses and housestaff needed some effective controls in cases of patient misbehavior; in the nurses' station were a firehose, very strong orderlies, and a syringe available loaded with apomorphine.

The two most frequent medical emergencies were acute pulmonary edema and diabetic ketoacidosis. Interns did the admission blood counts and urines, sputum smears for acid-fast bacilli or pneumococcus typing, if indicated, and stool guaiacs. We drew all the blood specimens for the laboratory every morning with the help of a good nurse and an elegant, well equipped cart made in the hospital shop. This job had to be finished in time for resident's rounds at 8:00. Residents or interns started all IVs and gave all intramuscular injections—mostly penicillin every three hours around the clock. We even learned to sharpen needles!

Otherwise the pace was leisurely. the hospital corridors quiet, and throughout a sense that everything was terribly efficient and spotlessly clean. The head floor nurse was a hierarch without a trace of democracy in her soul. We learned more in those 15 months than ever before or since, and the friendships formed have lasted, except for deaths, half a century. Reflecting on these 50 years only confirms my long-held notion: real progress is rare and by lucky chance; rather what we experience mostly are changes and trade-offs, and always uncertainty about how the books will balance in the end, uncertainty about the unintended effects of theories and therapies that looked so reasonable and good at the time. It seems to me, looking back, that trust, confidence, and respect abounded, between doctors and patients, doctors and doctors, doctors and nurses. Though the hospital hierarchy was real and well defined it was also eminently civil, all intended "for the benefit of the sick."

This Month's Reading in Review

TIMOTHY B. NORBECK

"That's something they used to do in Russia when people didn't comply. They 'educated' them."

Connecticut State Senator Louis C. DeLuca, responding to insurers' testimony that they "educate," rather than "retaliate" against, doctors who allow lengthy hospital maternity stays for their patients. CSMS President Dickerman Hollister, Jr., M.D., had previously testified about the retaliatory measures being taken against physicians.

Hartford Courant (17 January 1996)

"We have no business being in the business of health care any more than the insurance companies do. We ought to put physicians back in charge of the doctor-patient relationship and the guidelines of care—not legislators, bureaucrats, insurance companies, or HMOs."

Connecticut State Senator George L. Gunther, during the "drive-through delivery" bill debate.
Connecticut Post (17 January 1996)

Some 52% of managed care executives agreed that "there is a significant backlash coming in response to managed care's emphasis on cost," according to a recent survey by executive search firm Witt/Keifer, Ford, Hadelman & Lloyd.

AM News (20 November 1995)

According to a survey published in the current issue of *Lawyers Weekly USA*, medical malpractice cases resulted in the most frequent liability awards in 1995.... Moreover, five of the top ten monetary verdicts—ranging from $40 million to $98.5 million—came in medical malpractice suits.... Cases involving injuries to babies during childbirth accounted for three of the largest awards.

Tampa Tribune (15 January 1996)

Some 81% of health economists agreed that "the primary reason for the increase in the health sector's share of G.D.P. over the past 30 years is technological change in medicine." Fully 91% took issue with the assertion that "the high cost of health care in the United States makes U.S. firms substantially less competitive in the global economy."

New York Times (18 January 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

The most dangerous driving day is Friday, and the most dangerous time of day is late afternoon to early evening.... The most dangerous month to drive is November while the safest month is March.... The safest day to drive is Sunday.... Medium and heavy trucks make up less than 4% of registered vehicles but are involved in nearly 10% of fatal accidents.

National Safety Council

Baby boomers are beginning to have their heart attacks and strokes, driving up cardiovascular deaths for the first time since 1980.... The problem is sheer numbers, not a new epidemic.... Boomers are probably healthier overall than their parents.... If it weren't for healthy habits adopted by many boomers, coronary units would be easily overwhelmed in the next 10 to 20 years.

From an American Heart Association report in
USA Today (25 January 1996)

Say What?
Names that showed up recently on police blotters:

Jesse James—For assault in St. Joseph, Missouri
Amelia Earhart—For speeding in Parma, Ohio

Notable announcements in the news:
Dr. Michael Cholera—Hired by a medical clinic in Koloa, Hawaii
Pat Mummy—Appointed as a county coroner in Spokane, Washington

From the *Funny Times* as reported in
Forbes (12 February 1996)

Only in America: A stick and blanket seized from the home of rape suspect Melvin Gardner can't be used as evidence because law officers invaded his privacy by searching his apartment after 9 P.M., a New York trial judge ruled.... Although the warrant said to search "anytime of day," Judge David Friedman said that doesn't mean any time in the 24-hour day.... Gardner is charged with dragging a 28-year-old woman into his apartment September 10, beating her with a stick and raping her. He says sex was consensual.

USA Today (2 February 1996)

From the Executive Director's Office

CALL

Annual Meeting of the House of Delegates

The 1996 Annual Meeting of the House of Delegates will be held at the Ramada Inn, 275 Research Parkway, Meriden. The meeting will commence at 12:30 P.M. on Wednesday, 8 May and will continue until all business has been concluded.

Dickerman Hollister, Jr., M.D., President
Howard J. Wetstone, M.D., Speaker of the House
John P. Bigos, M.D., M.D., Secretary

11:30 A.M.	Registration of Delegates Luncheon
12:30 P.M.	Call to Order
	Adjournment at Conclusion of Business Reception for the Incoming President

Introduction of Resolutions

Article V, Section 12, Par. 3 of the Bylaws of the Society provides that:

Resolutions may be introduced by any Active, Life Member, Student Member or Postgraduate Physician Member of The Society, in compliance with the following provisions:

a. *All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*

b. *Component county associations or the Student Member or Post Graduate Physician Member Associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meetings in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc., be considered regular business if they are received later than fifteen days prior to the date of the meeting.*

c. *Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of The Society at any time and shall be considered as regular business.*

d. *Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provisions of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

COUNCIL MEETING

Wednesday, 17 January 1996

Attendance

In addition to the Chairman, Dr. Joseph Czarsty, were Drs. Ahamed, Beck, Bigos, Brooks, C. Czarsty, Deren, Franklin, Freedman, Hollister, Kamens, Katz, Keating, McDonnell, Montegut, Redmond, Sadowski, Scarpa, Schwartz, Sosa, Timmerman, Watson, Wolfson, Zanker, and Zeppieri.

Also present were: Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Schaffman, Ms. Norbeck, Ms. Morelli, Mr. Sullivan, (all CSMS staff), Mr. Rick Fiorentino, (HCMA Staff), Mr. Michael Conway (FCMA Staff), Ms. Ann Harney (NHCMA Staff), Myron Genel, M.D., David Thompson, M.D., (CSMS-IPA), and David Parke, M.D., Chairman, CSMS Committee on Legislation.

Absent were: Drs. Bobruff, Eslami, Geary, Handleman, Herzog, Lesnik, Mushlin, Tesoro, Van Nostrand, and Wetstone.

Reports of Related Organizations

CPRO: Dr. Kamens presented a comprehensive report detailing the past history of CPRO review, the challenges faced in changing the confrontational review into a collaborative and education effort with hospitals and physicians, and the outstanding response of health care professionals to the information obtained from collaborative studies.

Particularly noteworthy were the data indicating improvement in compliance with physician-developed process of care parameters. Outcome studies will in time be conducted to determine the ultimate impact of such improvement in delivery of care. There was also graphic demonstration of the impact made by systems changes within hospitals on improving quality of care.

He stated that he thought that the PRO had concluded that some good has been done, and by all accounts the most important thing that has been done is to create an atmosphere and a philosophy somewhat different from what it was 11 years ago when he first become Medical Director.

Dr. Kamens announced that he was resigning as Medical Director of CPRO to be effective 15 February 1996. Dr. Czarsty stated that Dr. Kamens deserved a great deal of credit and commended him for doing an excellent job in a very difficult position, putting up with complaints about things he didn't have much control over, but the things he could control he did, for the betterment of medicine.

Report of the President

Dr. Hollister reported on his continuing effort to meet everyone in Hartford who is important to the practice of medicine, and that he met with Joyce Thomas, Commissioner of Social Services (Medicare and Medicaid programs) and discussed many of the problems of eligibility and implementation of the Medicaid program. He stated that he was informed that, basically, it was a lack of patient understanding on how to apply for Medicaid coverage. He also reported on a meeting with Senator Toni Harper, who chairs a Medicaid Managed Care Council, who stated that there has been a slow-down in the expansion of the program into the counties in order to correct some flaws in the system. He stated that he testified at several hearings, one on managed care and the other on "drive-through deliveries." He also reported on a meeting with Nancy Wyman, State Controller, who informed him that she was getting a block grant from the federal government which was to be used for the underinsured and noninsured. He commented on the AMA Legislative Conference held in Washington and reported on a series of articles critical of medical care that appeared in a Massachusetts publication "Spotlight."

1. *Workers' Compensation Protocols:* Dr. Hollister reported that he had called a meeting of the relevant specialty society presidents and the CSMS Ad Hoc Committee on Workers Compensation Protocols to address specifically the exclusion of certain referral physicians in the new protocols effective 1 January. The following recommendations were the outcome of this meeting:

(a) That the Connecticut State Medical Society officially request the inclusion of physiatrists and neurologists as referral physicians in the protocols. Currently, after six weeks of passive treatment, a referral is required to orthopedists and neurosurgeons only.

In addition, the Connecticut State Medical Society should request that Family Practice be included in the protocols in the category of "original treating physician." (A letter had been received from the Connecticut Academy of Family Physicians requesting that Family Practice be included in the workers' compensation physician panel.)

(b) That the Connecticut State Medical Society should officially accept Chairman Frankl's invitation to provide feedback on the protocols and that we do so within a six-week time frame.

(c) That the Connecticut State Medical Society establish a standing committee of up to eight members on Workers' Compensation.

It was VOTED to approve the recommendations and establish a standing committee on Workers' Compensation.

2. *Albert Schweitzer Institute for the Humanities:* Dr. Hollister reported at the last Council meeting that he had received correspondence from the subject organization looking to expand their network of health care professionals who can provide educational training, consultations, or direct medical service in developing regions. They expressed the need for specialists to work with the Nickerie Hospital in Suriname, South America. He informed the Council that he was going to Suriname for a week to help them develop an oncology program.

Ad Hoc Committee on Data Study

It was VOTED to appoint an Ad Hoc Committee specifically to find out how statistical data are accumulated and disseminated in Connecticut and other parts of the country at the present time. The committee is expected to develop guidelines for collection and dissemination of information in Connecticut and report back to the Council by its June meeting. The following committee was appointed:

Chairman: Edward Kamens, M.D.
John Bigos, M.D.
Michael Deren, M.D.
Stephen Katz, M.D.
Stanley Keating, M.D.
David Parke, M.D.
Juan Sosa, M.D.

Report of the Executive Director

Mr. Norbeck reported on the following items of interest:

1. *Oregon Initiatives:* One is the Capitation Initiative, which was written by an ophthalmologist in Salem, and would prohibit capitation which the physicians contend can cause doctors to withhold care because of self-interest. The second initiative is the Health Care Freedom Initiative (basically any willing provider) which would allow patients to choose what kind or providers will treat them. Both of the items will appear on the November ballot in Oregon.

2. *Drive-Through Deliveries:* It was reported that Maryland, New Jersey, New York, North Carolina, and Massachusetts have passed laws mandating a 48-hour stay for new mothers, but many are finding, as others around the county have, that state laws do not cover the self-funded insurance plans offered by more than half of the employers. The Massachusetts law which takes effect on 19 February will force every insurer doing business in that state to cover a minimum 48-hour stay by prohibiting hospitals from releasing a new mother earlier than 48 hours, unless they meet strict safety requirements.

3. *Senior Citizens Speaking Program:* Mr. Norbeck reported that he has managed to speak to about 25 senior citizen centers, with more speaking engagements already arranged, on the proposed Medicare legislation. It is a totally nonpartisan presentation with a question-and-answer period. The seniors seem to appreciate it and ask many questions. He felt it was a wonderful opportunity to get major points across, as they clearly do not understand many of the issues, ie, need for tort reform, antitrust reform and the inordinate power of insurance companies. They were informed that Medicare pays only 68% of private physicians' fees and of the reductions in the Medicare program. He stated that he felt that they do like and respect their physicians. He asked that any physician wishing to tackle a project in their area to contact him.

4. *Public Opinion Strategic National Poll:* He reported that answers to a recent poll illustrated how much people are in the dark about Medicare spending and how much confusion there is about this issue. Only 22% of the people responding seem to know anything about insurance.

5. *Wyoming Senate Race:* Mr. Norbeck reported that Dr. John Barrasso, who has been a surgical resident in New Haven, has contacted him to say that he is a favored candidate for the nomination for U.S. Senator in Wyoming to replace the retiring Alan Simpson. He is in an August primary struggle for the nomination and believes he can prevail with a show of financial support; the limit is $1,000 per person. At the present time there is only one physician in the Senate. For information concerning his campaign, you may contact him at the following address: Barrasso for Senate, P.O. Box 5-1996, Casper, Wyoming 82605.

Legislative Update

Dr. Parke reported on a committee meeting to which four legislators had been invited to review issues in which the Society had an interest. Representative James Amann, Chair of the Insurance Committee, discussed the legislature's need to find a balance between the insurance industry's needs and the goal of good patient care. Senator George Gunther discussed his legislative proposal which would bring about major health care reform within the programs administered by state government. The senator also called for the providers to become more involved in the process. Senator Toni Harp briefed the committee on the progress and problems with Medicaid Managed Care and Representative Anne McDonald discussed the work of the Managed Care Task Force, the CSMS Patient Protection Act proposal and her opposition to Any Qualified Provider legislation.

The committee is also considering the issue of the delegating of certain functions to medical assistants, leg-

islation that impacts on hospital-based physicians, TMJ insurance coverage, and the Patient Protection Act.

He stated that at the next Legislative Committee meeting we would be finalizing our Patient Protection Act approach for the session. There appears to be support on both sides of the aisle for regulation of managed care, but the issue of Any Qualified Provider which this Council asked us to pursue appears to be a dead issue as a single entity. Therefore the committee will have to rephrase its patient protection language which to date had included a reference to Any Qualified Provider. Dr. Parke reported that he had been appointed to a Committee on Access to Medicaid Managed Care. It was reported that 75% of Medicaid funding goes to the elderly. He invited all the councilors to be present at the legislative reception that was to be held on 23 January at the Civic Center, Hartford. He commented on his attendance at the AMA Legislative meeting in Washington and stated that he hand an opportunity to meet with some legislators.

Communication from Connecticut Academy of Family Physicians

The Chairman of the Council brought to the attention of the Council a letter from the Connecticut Academy of Family Physicians requesting CSMS to endorse a bill before the General Assembly entitled "Mobilize against Access to Tobacco for Children's Health" (MATCH). It was VOTED that CSMS endorse this legislation.

Actions Referred to the Council from House of Delegates

1. *Bylaw Amendment:* The following proposed amendment was referred to the Council for consideration given the possibility that the proposed changes could make it easier to change the bylaws than to conduct ordinary business. The Council VOTED to amend the proposed bylaws with the addition of the words that appear in bold face capitols.

ARTICLE XVI-Amendment to Bylaws: " The Bylaws of the Society may be amended **WHEN A QUORUM IS PRESENT** by an affirmative vote of at least two-thirds of the delegates present and voting at any regular or special meeting of the House of Delegates. Amendments shall take effect immediately upon adoption unless otherwise specified."

Present Bylaw reads: "The Bylaws of the Society may be amended by a majority of the total number of the voting members of the House of Delegates"

2. *Effect of Medicaid Managed Care on Access to Medical Care:* The following resolution was referred to the Council:

"Resolved, the Connecticut State Medical Society shall monitor the effects of reimbursement rates on access to care under the new Medicaid managed care system and make a report at the next House of Delegates with recommendations."

It was the consensus of the Council that this was already being done and a report will be made to the next meeting of the House of Delegates.

3. *Condemnation of Health Care Plans which Penalize Physicians for Providing Indicated Medical Care:* The following resolution was presented to the House:

"Resolved, that the Connecticut State Medical Society shall initiate a public awareness campaign condemning as unethical and anticonsumer the practice by some health care plans which financially penalize physicians for providing appropriate medical care, and be it further

Resolved, that concomitant with the start of the public awareness campaign which condemns those health insurance reimbursement systems which are unethical and anticonsumer, the Connecticut State Medical Society shall notify the public of any and all health insurance plans operating within the State of Connecticut which financially penalize physicians for providing appropriate medical care, and be it further

Resolved, that the Connecticut State Medical Society shall forward a copy of this resolution to the Council on Ethical and Judicial Affairs of the American Medical Association for inclusion in the "Code of Medical Ethics" stating that it is unethical for physicians to participate in a health insurance plan which provides direct financial incentives for withholding indicated medical care."

The House adopted the recommendation of the reference committee as follows:

That the House of Delegates appreciates the spirit in which the resolution was intended, and would carry it out:

(a) By endorsing AMA Guidelines #285-982, Section 3 which reads:

"When physicians are employed or reimbursed by managed care plans that offer financial incentives to limit care, serious potential conflicts are created between the physician's personal financial interests and the needs of their patients. Efforts to contain health care costs should not place patient welfare at risk. Thus, financial incentives are permissible only if they promote the cost-effective delivery of health care and not the withholding of medically necessary care.

Any incentives to limit care must be disclosed fully to patients by plan administrators upon enrollment and at least annually thereafter.

Limits should be placed on the magnitude of the withholds, bonuses and other financial incentives to limit care. Calculating incentive payments according to the perfor-

mance of a sizable group of physicians rather than on an individual basis should be encouraged.

Health plans or other groups should develop financial incentives based on quality of care. Such incentives should complement financial incentives based on the quantity of service used."

(b) By directing the Council to develop educational and informational programs for physicians and consumers to allow ethical and informed decisions in the managed health care setting.

The Council reviewed the resolution and it was stated that they are carrying out the intent of the resolution.

4. *Ethical Accountability With Positions of Hospital Authority:*

The House voted that the following resolution be referred to the CSMS Council for review, calling its attention to the AMA's Council on Ethical and Judicial Affairs opinion 4.07.

"Resolved, that the Connecticut State Medical Society regards any attempt by the chairs or other paid physicians of hospital clinical departments and/or sections who use their position of power to influence the granting of hospital privileges as a means for controlling patient care referrals to be a breach of medical ethics, and be it further

Resolved, that the Connecticut State Medical Society will make passage of this Resolution by the American Medical Association a high priority to ensure: 1) the ethical conduct of physician members in positions of hospital authority, and 2) that the care recommended to a patient is in the best interest of the patient and not in the best interests of the entities contributing to the compensation of the hospital clinical department and/or section chairs."

CEJA OPINION 4.07 Staff Privileges.

The mutual objective of both the governing board and the medical staff is to improve the quality and efficiency of patient care in the hospital. Decisions regarding hospital privileges should be based upon training, experience, and demonstrated competence of candidates, taking into consideration the availability of facilities and the overall medical needs of the community, the hospital, and especially patients. Privileges should not be based on numbers of patients admitted to the facility or the economic or insurance status of the patient. Personal friendships, antagonisms, jurisdictional disputes, or fear of competition should not play a role in making these decisions. Physicians who are involved in the granting, denying, or termination of hospital privileges have an ethical responsibility to be guided primarily by concern for the welfare and best interests of patients in discharging this responsibility (Issued July 1983, updated June 1994).

The Council VOTED to reaffirm the CEJA position.

5. *CPT Coding for Immunization Injections:*

It was voted to refer the following resolution to the Council without recommendation:

Resolved, that the AMA use its influence to urge third party payors to utilize the CPT Codes which were created to provide a uniform language that accurately describes medical, surgical and diagnostic services performed by physicians.

It was VOTED to table action on this resolution and request staff to look up the current AMA policy on immunization payment and coding to see whether there is already a policy that covers these issues and report back to the next Council meeting.

Resorts on AMA House of Delegates Meeting

Three reports were distributed to the Council members: One from the AMA, one from Dr. Kamens and another from Dr. Freedman.

Dr. Zanker expressed his appreciation to Drs. Kamens and Freedman for their extensive and informative reports and the entire delegation for their untiring participation at the AMA meetings. At this meeting of the AMA House of Delegates over 195 resolutions and actions were initiated and completed by 423 delegates present. Because the meeting was held in Washington, DC, this afforded an excellent opportunity for members of the delegation to make direct contact with legislators in each and every one of the states. The CSMS delegation was represented at all meetings with Connecticut legislators and their staffs.

Dr. Kamens gave an overview of the majority of the business that came before the House of Delegates and Dr. Freedman discussed the restructuring of the Federation Study to improve the effectiveness of the whole Federation on behalf of physicians. It was VOTED to approve the concept that a reorganization of the Federation of Medicine is a good idea. Dr. Freedman also brought to the attention of the Council that there was a great deal of unrest about the different conversion factors for various specialties under Medicare. Dr. Kamens reported that when Mr. Gingrich spoke to the House, he made it very clear that the AMA is highly regarded and respected and is the place they went to when they wanted to get some input when they were talking about the kind of reform they wanted for the Medicare program.

It was VOTED that the officers of the Society come up with a plan to study the organization of the House of Medicine in the State of Connecticut. Dr. Czarsty appointed the following to make up the study committee: The President, President-Elect, Vice-President, Treasurer,

Secretary, Speaker, Vice-Speaker, Chair and Vice-Chair of the Council and the Chair of the AMA Delegation.

It was VOTED to accept the reports of Dr. Kamens and Freedman.

CSMS Charitable Trust

It was VOTED to receive the minutes of the Trust and also the auditor's report as information. Dr. Roger Beck reviewed the financial statement and outlined the donations made. He also reported that Dr. Margaret Coe of Portland, Conn., a member of the Society, donated $5,000 to the Charitable Trust. A suitable letter and certificate of appreciation was mailed to Dr. Coe. The Council went on record to formally express their appreciation for her generosity and also requested that she be extended an invitation to attend the next House of Delegates meeting.

Endorsement of Handbook on Child Abuse

Dr. Vincent Sullivan, Medical Director of the Department of Children and Families, requested the Council to endorse a handbook the department is publishing entitled "Handbook for Healthcare Professionals, Identifying and Reporting Suspected Child Abuse and Neglect." The Handbook has already been endorsed by the Connecticut Chapter of American Academy of Pediatrics, the Section on Orthopedics, and endorsement is expected from the CHA Conference of Emergency Department Directors. Dr. Zeppieri reviewed the handbook for the orthopedist and outlined the details of the handbook and recommended its endorsement. Dr. Fong, CSMS representative to the Task Force on Reporting Child Abuse and Maltreatment, reviewed the handbook and recommended its endorsement and made some comments and suggestions about the handbook which were sent to Dr. Sullivan. It was VOTED to endorse the handbook.

Committee on CME

Dr. Ilona Figura submitted her resignation as chair of the CME Committee due to the pressure of other activities, however, she wished to remain as a member of the committee. It was VOTED to accept her resignation as chair and appoint Dr. Jack Fong of Danbury as chair.

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

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Group practice seeks physician to join its diversified primary/continuing care facility. Full or part-time considered. Attractive salary plus extra incentives available. Contact Richard R. Slater, M.D., telephone (203) 787-7191, fax (203) 777-8919.

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Internist wanting to practice full-time primary care during the months of May, June, July and August 1996. M.D. at University of Michigan (1989), internship/residency at Yale-New Haven Hospital, fellowship in infectious diseases at Yale University; American Board certified in internal medicine and in infectious diseases; licensed in Connecticut since 1991. Experience includes emergency medicine and HIV care. South-central Connecticut preferred. Please call (203) 248-4539.

Available July 15, 1996. Passed National Boards. American Board eligible. M.D. at Columbia University. Internship and residency at NYU—Bellevue Hospital. Would like to join a group, associates or institutional practice in a medium-sized community. Please respond to: Gerald Schynoll, M.D., M.P.H., 207 E. 30th St. #4C, New York, NY 10016, telephone (212) 685-9442.

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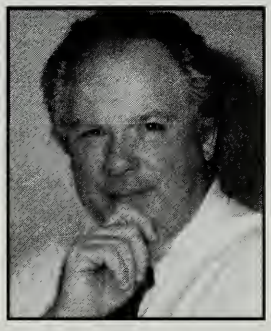

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Hyperkalemia in the Elderly: A Group at High Risk

MARK A. PERAZELLA, M.D.

ABSTRACT—Hyperkalemia is a serious electrolyte disorder which appears to develop more commonly in the aged patient. The elderly may be predisposed to hyperkalemia as a result of underlying abnormalities in potassium homeostasis. These include inapparent renal insufficiency, tubulointerstitial disease in the kidney, disturbed aldosterone production, and abnormal salt and water balance. Several commonly prescribed medications may further disrupt potassium balance and promote the development of hyperkalemia in these patients. Trimethoprim-sulfamethoxazole, a commonly used antimicrobial agent, has recently been noted to cause hyperkalemia in the elderly, even with standard dosage. The elderly should be considered at high risk to develop hyperkalemia, especially when they are using certain medications. Potassium concentration should be monitored closely when these patients are hospitalized and/or treated with potassium-altering medications.

HYPERKALEMIA is a serious and potentially life-threatening cation disturbance. The elderly patient, consequent to a number of underlying perturbations in potassium homeostasis, is susceptible to this electrolyte disorder.[1,2] Although normokalemia may predominate in these patients at baseline, a superimposed alteration in potassium balance may induce the development of hyperkalemia.[1,2] In this context, an increase in dietary potassium, a subtle decline in renal function, volume depletion, and therapy with certain medications can disturb potassium homeostasis in the aged patient.

MARK A. PERAZELLA, M.D., F.A.C.P, Assistant Professor of Medicine, Section of Nephrology, Department of Medicine, Yale University School of Medicine, New Haven.

Hyperkalemia and Senescence

Advancing age is associated with a variety of changes in both renal and extrarenal regulation of potassium balance. Renal mass is lost progressively in elderly human beings; renal weight decreases by approximately one third from young adulthood to the eighth decade of life.[3] A significant reduction in both renal blood flow (RBF) and glomerular filtration rate (GFR) may accompany this reduction in renal mass.[3] Additionally, a disturbance of renal tubular potassium secretion also occurs with the aging process, the result of either intrinsic tubular dysfunction or impaired hormone production.[1,2,10-14] Impairment of one or more of these renal-related functions may then contribute importantly to the increased risk of hyperkalemia in the geriatric patient.

Reduced RBF and GFR

The decline in renal blood flow in the elderly occurs mainly as a result of a blunted response of the renal vasculature to systemic and locally produced vasodilatory substances as well as an increase in renal arteriolar vasoconstriction.[4] These functional changes in renal hemodynamics, as noted in response to pyrogen, acetylcholine, and angiotensin administration, have been demonstrated in older individuals but not in younger subjects.[4,5] Similarly, an age-related defect in the renal vasodilatory response to intravenous glycine was found in senescent rats when compared with young and adult rats.[6]

Glomerular filtration rate (GFR) also declines with advancing age. A progressive linear decline in creatinine clearance with aging has been demonstrated in healthy volunteers.[7] The rate of decline in creatinine clearance was 0.8 mL/min/1.73 m^2 per year and occurred in individuals ranging from 30 to 80 years of age.[7] A steeper age-

related decline in creatinine clearance also was noted in blacks as compared with whites, possibly from an increased propensity for glomerulosclerosis in the African-American population.[9] The loss of GFR in the elderly has been ascribed to the increased development of glomerulosclerosis in the aging kidney, possibly the result of hyperfiltration in the reduced number of functioning nephrons.[15] Additionally, the presence of atherosclerotic renal vascular disease, a common anatomic finding in the elderly, may also contribute to loss of GFR as a result of ischemic atrophy of renal tissue.[16]

Tubular Dysfunction

Distal nephron function may also be impaired in the elderly subject. This may result from either an age-related change in structural integrity or an inadequate production of regulatory hormone, or both.[1,2,10-14] Certain cells of the distal nephron (principal cells) are uniquely designed to excrete potassium under the control of aldosterone, the serum potassium concentration, sodium and fluid delivery to the distal nephron, and other factors.[12-14,17] Passive sodium reabsorption through apical membrane sodium channels generates a lumen negative potential which facilitates electrogenic potassium secretion through apical membrane potassium channels.[12-14,17] The Na^+–K^+ ATPase pump, located on the basolateral surface of these cells, acts to exchange intracellular sodium for potassium from the peritubular capillaries, thereby creating a gradient for diffusion of potassium from the intracellular space to the tubular lumen.[12-14,17] Renal potassium secretion is regulated by these various factors which affect both sodium and potassium channel activity as well as Na^+–K^+ ATPase pump activity. Not unexpectedly, anatomic changes in this segment of the kidney, in the form of tubulointerstitial fibrosis and scarring, may result from the aging process or from multiple insults which afflict the kidney.[1,2,10,11] Hypertension, ischemia, infection, urinary obstruction, and toxin exposure are some of the more common insults.[1,2,10,11] It is no surprise that this structural damage can impair the capacity of the distal nephron efficiently to regulate potassium and sodium balance, leading to hyperkalemia and sodium wasting.

In contrast to anatomic changes in the kidney, a disturbance in aldosterone production may cause a defect in distal tubular function.[12-14] Aldosterone crucially regulates renal potasssium secretion in the distal nephron, and probably also modifies both colonic and cellular potassium homeostasis.[12-14] Aldosterone acts to enhance potassium secretion in the principal cell through stimulation of Na^+–K^+ ATPase pump activity as well as apical membrane sodium and potassium channel activity.[12-14] As a result, an inappropriately low concentration of aldosterone, associated most often with low plasma renin activity, may result in hyperkalemia.[12,13] The syndrome of hyporeninemic hypoaldosteronism occurs commonly in the elderly, especially when hypertension, diabetes mellitus, and renal insufficiency are also present.[12] Furthermore, aldosterone deficiency, despite normal plasma renin activity, may also be present in healthy elderly patients.[14] This state of relative hypoaldosteronism has been demonstrated in elderly individuals who were challenged with potassium infusion.[14] Of note, none of the patients studied had clinical or laboratory evidence suggestive of the syndrome of hyporeninemic hypoaldosteronism.[14] Hence, it appears that hypoaldosteronism in the aged, whether clinically apparent or not, is an important risk factor for hyperkalemia in both the healthy and ill elderly patient.

Inadequate delivery of sodium and volume to the distal nephron, leading to a functional defect in distal tubular potassium secretion, may also occur in the elderly.[1,2,17] These patients are subject to both dehydration and volume depletion as a result of central hypodipsia and impaired renal sodium conservation, respectively.[10,18] This imbalance in salt and water homeostasis, through the mechanism described above, could then disrupt distal nephron potassium secretion and further increase the propensity for hyperkalemia in this group.

Taken together, it appears that the aging process is associated with change in both the kidney and the systemic factors which regulate potassium balance. These perturbations may increase the elderly patient's risk for the development of an elevation in serum potassium concentration. It is not surprising, then, that the older patient develops hyperkalemia when intercurrent illness and/or therapy with certain medications are superimposed.

Hyperkalemia and Drug Therapy

The elderly are commonly prescribed medications which are capable of producing an elevation in serum potassium concentration (Table 1). These drugs can produce hyperkalemia through interference with multiple regulatory sites in potassium homeostasis. Included in the list of culprit medications are potassium supplements, potassium-sparing diuretics, nonsteroidal anti-inflammatory drugs (NSAIDs), angiotensin-converting enzyme inhibitors (ACE inhibitors), and beta-blocking agents.[1,2,19] Other less well recognized causes of a disturbance in potassium balance include the commonly prescribed drugs heparin, digoxin, and trimethoprim-sulfamethoxazole.[1,2,19] Although these drugs may precipitate hyperkalemia in patients without a known predisposition to this electrolyte disorder, they do so more commonly in the aged.

It is clear that potassium supplements produce hyperkalemia through ingestion and potassium-sparing diuretics by inhibition of renal potassium excretion. However, the mechanisms by which the other medications increase

Table 1.—Potassium-Altering Medications and their Mechanism of Action	
Medication	**Mechanism of Action**
Potassium Supplement	Potassium Ingestion
Potassium-Sparing Diuretics	
Spironolactone	Aldosterone Antagonism
Triamterene	Block Na^+ Channels in Principal Cells
Amiloride	Block Na^+ Channels in Principal Cells
NSAIDs	Decrease Renin/Aldosterone, Decrease RBF and GFR
ACE Inhibitors	Decrease Aldosterone, Decrease RBF and GFR
Beta-Blocking Agents	Decrease Potassium Movement into Cells
Heparin	Decrease Aldosterone synthesis
Digoxin Intoxication	Decrease Na^+–K^+ ATPase Activity
Trimethoprim	Block Na^+ Channels in Principal Cells

serum potassium are not as obvious. NSAIDs disturb potassium homeostasis by inhibiting prostaglandin synthesis. These autocoids, especially prostaglandin E_2 and prostacyclin, stimulate juxtaglomerular cell renin release and aldosterone synthesis, increase RBF and GFR, and increase the number of open high-conductance potassium channels in distal tubular principal cells.[20] One can then appreciate how NSAIDs, through inhibition of prostaglandin production, could impair renal potassium excretion. ACE inhibitors produce hyperkalemia in the elderly by blocking angiotensin II and aldosterone production as well as by decreasing RBF and GFR, both of which act to disrupt renal potassium excretion.[21] Beta-blocking drugs inhibit renin release and cellular uptake of potassium and cause hyperkalemia by these effects.[22] Heparin, irrespective of dose, has been reported to decrease adrenal gland aldosterone synthesis and elevate serum potassium on this basis.[23] Digoxin intoxication in the aged may lead to hyperkalemia.[24] Inhibition of Na^+–K^+ ATPase pump activity by digoxin impairs both cellular uptake of potassium and renal excretion of potassium.[24] Adverse reactions have been previously noted with trimethoprim-sulfamethoxazole therapy, however disorders of potassium balance have only recently come to light.[25-33] The development of hyperkalemia with trimethoprim-sulfamethoxazole therapy was first described in a patients with *Pneumocystis carinii* pneumonia who received a "high dose" of this medication.[25-28] Recently, "standard dose" trimethoprim-sulfamethoxazole has also been associated with the development of hyperkalemia, especially in patients with renal insufficiency and elderly individuals.[29-33] Laboratory investigations suggest that trimethoprim, a compound structurally similar to amiloride, blocks apical membrane sodium channels in the distal nephron and inhibits renal potassium excretion by this mechanism.[26,28]

Prevention and Treatment of Hyperkalemia

Since the elderly patient may be more susceptible to hyperkalemia, the clinician should identify those patients who are at highest risk. In this context, characteristics in the geriatric patient which suggest increased susceptibility include impaired renal function, even when not obvious, as well as concurrent diabetes mellitus, urinary tract obstruction, and chronic illness. The absence of these risk factors, however, does not exclude the potential for development of hyperkalemia in the otherwise healthy-appearing elderly individual, especially when treated with one or more drugs which could alter potassium homeostasis. Susceptible patients should be counseled regarding potassium intake and instructed to maintain adequate salt and water intake. Their medications should be reviewed frequently to avoid therapy with one or more of these potassium-altering medications. If therapy with one of these medications is absolutely required, the serum potassium concentration should be monitored closely. In addition, concurrent therapy with other potassium-altering medications should be avoided as much as possible. If hyperkalemia does develop in the geriatric patient, discontinuation of culprit medications and potassium-lowering therapy should be initiated immediately. Cardiac arrhythmias and electrocardiographic changes indicative of hyperkalemia, as well as potassium concentrations above 6.0 mmol/L, should prompt immediate therapy with intravenous cal-

cium to stabilize the heart and intravenous insulin/glucose to shift potassium into cells. Nebulized beta$_2$ agonists may also help lower potassium concentration by intracellular movement of potassium. Finally, hemodialysis may be necessary in patients with severe renal insufficiency.

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An Initial Evaluation of Subcuticular Skin Closure with Absorbable Intradermal Pins

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ABSTRACT—A skin-approximating instrument has been developed to facilitate rapid subcuticular skin closure of surgical incisions using intradermally placed absorbable pins. A prospective, randomized, double-blind study was conducted comparing wound healing characteristics of incisions closed using the intradermal pins and those closed using a subcuticular closure with a synthetic braided absorbable suture. Wounds were evaluated for cosmetic effect, closure accuracy, comfort, and speed of closure by the surgeon, an independent observer, and the patient. Incisions closed using both techniques resulted in equally excellent wound healing characteristics. The instrument facilitated a significantly more rapid closure than the characteristically time-consuming technique of sewing by hand.

Introduction

The cosmetic advantages, convenience, and safety of a running absorbable subcuticular skin closure has been well documented.[1,2,3,4,5] It does, however, require considerable skill and time to achieve a superior wound closure. Because of this, many surgeons have been reluctant to abandon the ease and speed of interrupted skin sutures or metal skin staples. The disadvantages of these techniques include the possibility of cross or point scarring, the necessity of suture removal, and the perception that the suture line must remain dry to minimize the risks of infection.[6]

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In an effort to combine the advantages of a subcuticular closure with the ease and speed of skin staples, an instrument has been developed that allows the surgeon to accurately approximate the skin with the placement of a thin absorbable pin within the dermis. (Fig. 1) To critically evaluate this method of skin closure we planned a trial to evaluate wound cosmetic results, patient comfort, and incisional closure time. This report reflects the first clinical use in human beings following extensive studies of wound healing using the stapling device in the porcine model.

Methods and Materials

In a prospective, double-blind study of 20 sequential patients presenting for elective surgery, 26 wounds were randomized (by single, designated side coin toss) for skin closure by a single surgeon (AKM) using either a classic handsewn subcuticular 3-0 polyglycolic acid closure technique (Dexon, Davis & Geck, Danbury, Conn.) (HS n=11) or the Sub-Q 20 subcuticular dermal approximating instrument (United States Surgical Corporation, Norwalk, Conn.) (SQ n=16). The groups were matched for age (*P*= NS) and sex (M/F SQ:11/4; HS:6/5). Both "clean" and "clean-contaminated" abdominal and chest incisions were studied. Both horizontal and vertical incisions were included. Existing scars were totally resected prior to skin closure (SQ:3/15; HS:4/11). Herniorrhaphy incisions represented two thirds of the surgical wounds studied (n=18), but sigmoid resection, colostomy closure, breast biopsy, and axillary dissection incisions were also evaluated. Hair was removed immediately preoperatively with an electric clipper and the skin underwent a five-minute chlorhexidine soap-mechanical scrubbing, followed by the application of a betadine paint. No retention sutures or skin taping were required in either group. Preoperative intravenous

Figure 1.—SQS-20 Subcuticular stapler.

antibiotics (cephalosporin) was used only as clinically indicated (SQ:2/15; HS:3/11). A formal mechanical and antibiotic bowel preparation of oral laxatives, neomycin, and metronidazole was used prior to colonic resections (SQ:l/15; HS:3/11). No patients required postoperative antibiotics.

Patients with known risk factors for wound disruption were excluded from this study.[7] This group included patients who were pregnant, taking steroids, had undergone chemotherapy or radiation therapy within three months of surgery, had renal failure, or nutritional abnormalities. Our internal review board requested that we also exclude patients with a history of keloid formation from this initial evaluation. All patients completed the study.

Evaluations

The incision length and time to complete skin closure were recorded by the circulating nurse. The surgeon evaluated the incision for eversion, ledging, separation, and overall appearance immediately upon closure. (Scale: 5 superior, 0 poor). All incisions were then evaluated at postoperative weeks one, two, three, six, and 60, by the patient and (a second) registered nurse, both unaware of the method of closure. The evaluating criteria in the postoperative period included erythema, induration, eversion, inversion, ledging, separation, evidence of infection, suture extrusion, sinus drainage, and overall cosmetic appearance. (Scale: 5 superior, 0 poor). The patient was asked to evaluate pain, redness, ridging, and appearance, using the same scale. Statistical significance was determined using a standard t test.

Results

Both the patient and the nurse evaluator judged the overall appearance of all incisions equal throughout the entire six-week observation period (*P*=NS) (Fig. 2 and 3). The patients noted slightly more redness of the handsewn closure at three weeks (HS:4.1; SQ:4.7 *P*=.05), however, this difference completely resolved by six weeks. Patients noted no difference in ridging and although they consistently complained of less pain with the SQ closure, the difference was not statistically significant.

The nurse evaluator noted no evidence in any wounds of eversion, inversion, ledging, separation, infection, suture extrusion, or sinus drainage. A consistently diminishing erythema and induration score was noted in both groups (3.8 to 5.0) from week one to six, but no difference

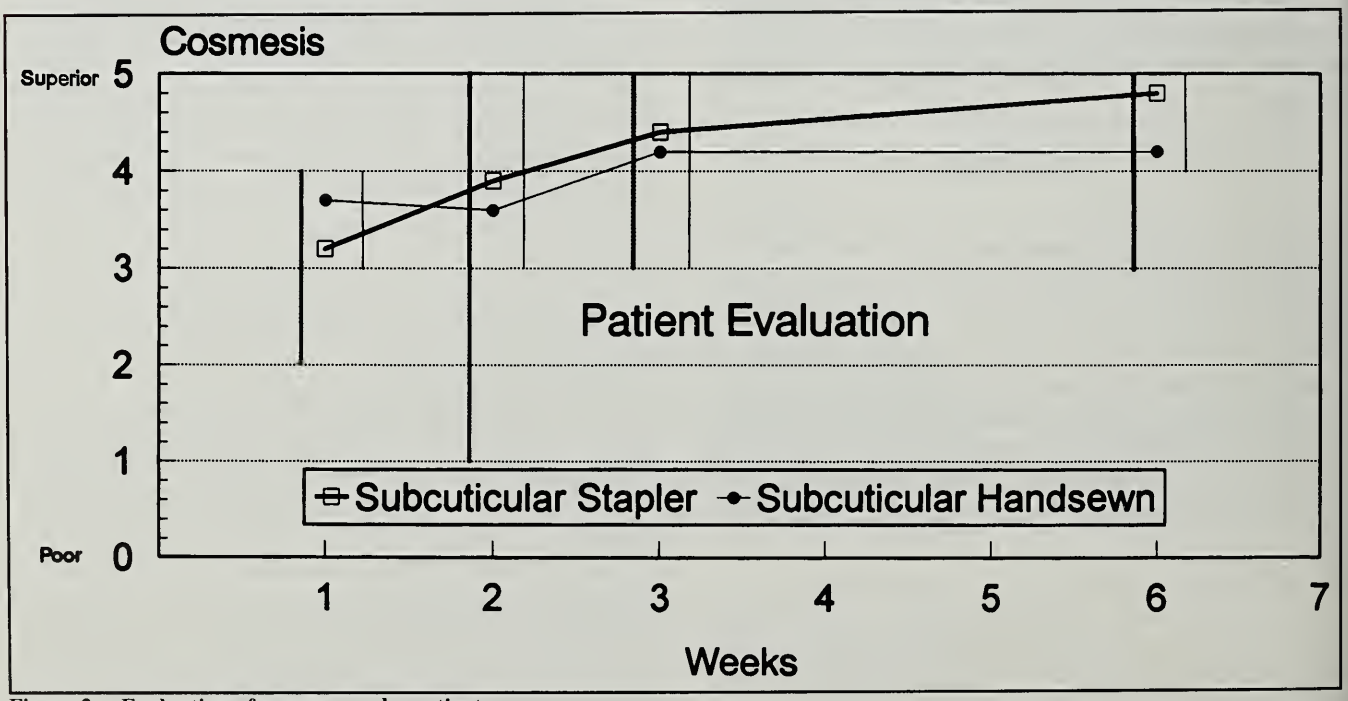

Figure 2.—Evaluation of appearance by patient.

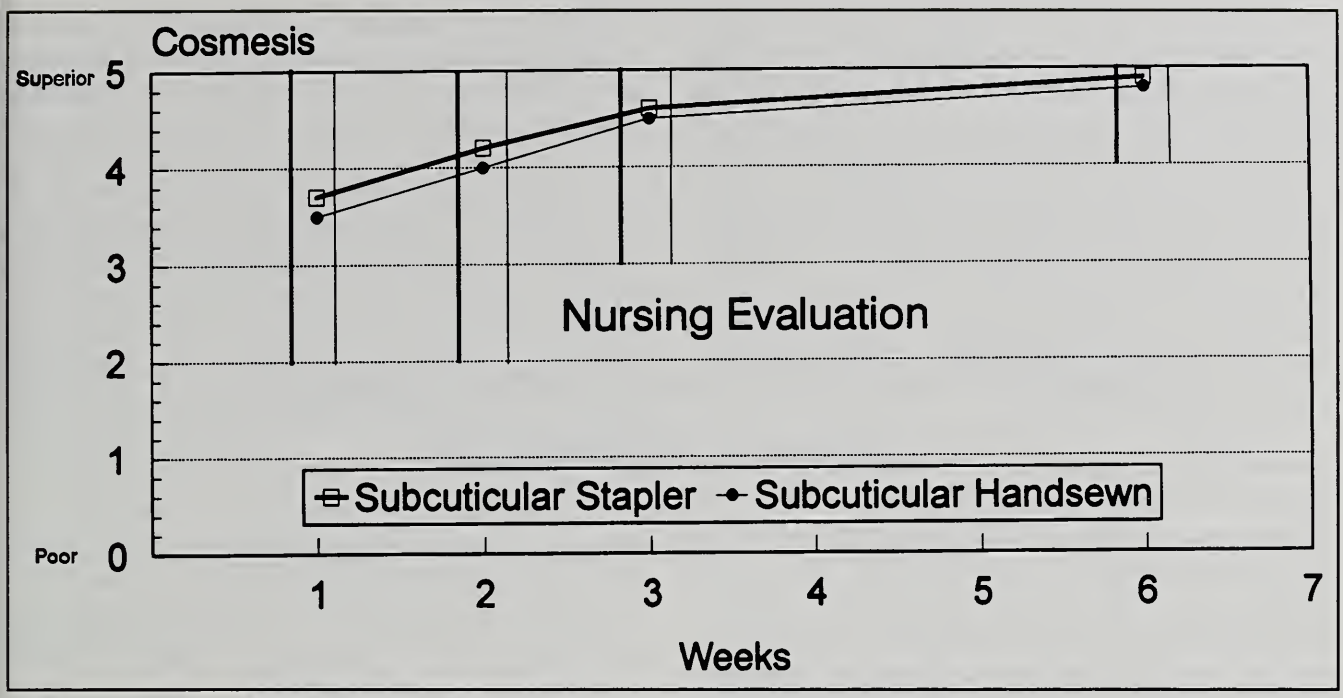

Figure 3.—Evaluation of appearance by nurse evaluator .

between two techniques could be identified. Only the surgeon's initial evaluation at surgery of overall appearance (HS:4.6; SQ:3.7 *P*= .01) (Fig. 2) and separation (HS:4.6; SQ:3.6 *P*=.01) showed any advantage to handsewn closure. Subsequent wound evaluations at 13 to 15 months continued to demonstrate comparable evaluation criteria in all categories for both experimental and control groups.

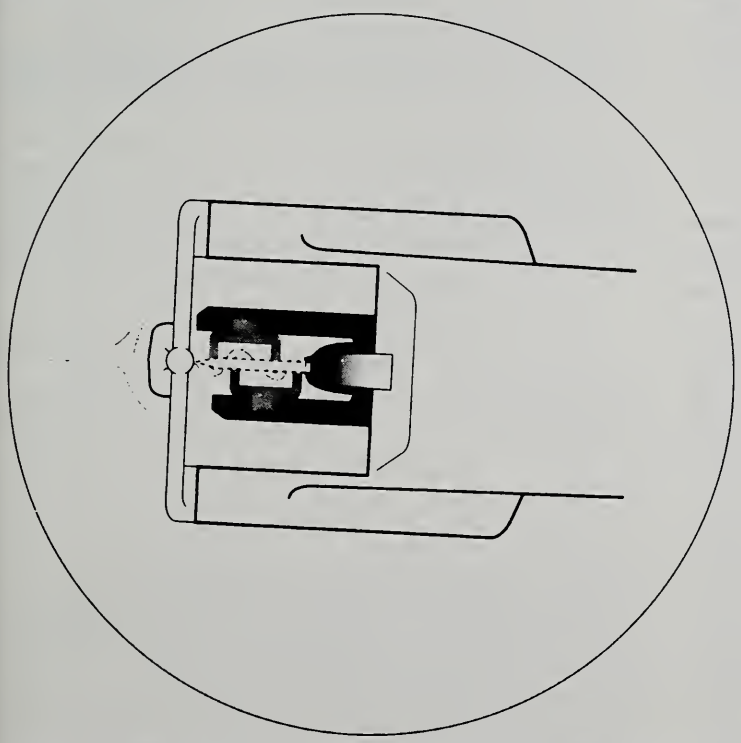

Figure 4.—Following momentary skin interdigitation, an absorbable pin is placed securing dermal approximation.

Two patients who underwent bilateral inguinal hernia repair, had one incision that randomized to the staple closure and the other to the control group. In the first and second week evaluations, one patient rated the staple closure slightly better (HS:3; SQ:4) and the other patient rated the appearance of the handsewn incision better. (HS:4; SQ:3.2) At the third and sixth week evaluations, the first patient continued to rate the stapled incision better (HS:4; SQ:5). The second patient rated both wounds equally superior (5).

Wounds were closed with the SQ instrument in half the time of classic subcuticular technique. (SQ:19.39 sec/cm; range: 3.57-35.00 sec. HS:43.47 sec/cm; range: 25.95-97.50 sec. *P*<.01).

Discussion

Over the centuries surgeons have closed wounds using a variety of ingenious techniques. Primitive tribes covered wounds with leaves as a scaffolding upon which clot could adhere and keep the wound approximated.[8] The ancient Egyptians used gum, the Masai closed skin wounds with acacia thorns, and Indian surgeons held wound edges together with termite and beetle mandibles locked in a death grip.[3,9] Wound closure with sutures was described in ancient Greek and Egyptian writings.[8] Modern mechanisms of skin closure, including adhesive skin tapes, suture placement, and metal clip applications have evolved very little from ancient techniques.

One excellent method of skin approximation which avoids the epidermal suture marking of

transepidermal closures is the placement of subcuticular absorbable suture that weaves between the exposed dermal edges with the finishing knot drawn below the surface.[10] When the epidermis seals with a fibrin clot, the wound becomes isolated from bacterial skin flora. Without sutures or clips piercing the epidermis, cross or point scarring is eliminated and the resultant scar is a single line without extraneous geometric distractions.[2,11] Because this closure is time consuming, many surgeons use this method only for "plastic closures," or, for the pediatric patient, to eliminate the stress and discomfort of removing external sutures.

In an effort to combine the good cosmetic results and convenience of a subcuticular closure with the speed and technical ease of an instrument closure, a subcuticular dermal approximating instrument was developed utilizing a unique biomechanical vector interface. The surgeon draws the apex of the incision in a longitudinal direction. With the instrument guide pin placed between the edges of the incision, it is closed, causing the approximating pincers to momentarily interdigitate the skin long enough to place an absorbable pin in the horizontal plane, thus piercing alternate sides of the exposed dermis. When the pincing mechanism is released, the skin resumes its preclosure orientation. Fig. 4 illustrates from above the skin pincers (light grey) causing a sinuous dermal approximation (wavy line), allowing the dermal pin (dotted) to be injected toward the left from the nozzle (medium grey).

The approximating pin is made of poly (glycolide-co-lactide) synthetic polyester which hydrolizes to glycolic and lactic acids with a minimal inflammatory reaction. This polymer was first reported by Bischoff and Walden in 1893,[13] but it has been only in the past 20 years that it has been used in the closure of surgical incisions. Polyglactin 910 was the first polymer of this type used clinically.[12] Absorption and tensile strength characteristics can be controlled by adjusting the glycolide-lactide copolymer ratios.[12,13] The polymer ratios of the pins used in this study resulted in a loss of tensile strength at four weeks, near total absorption between eight and 15 weeks, and total absorption by 26 weeks. These absorption characteristics are only slightly longer than the control suture (loss of tensile strength 65% at two weeks, 35% at three weeks, total absorption at eight to 12 weeks).

Both the handsewn and instrument-closed incisions were consistently judged superior by the patients and evaluator throughout the study. The only difference between the study and control groups, was the surgeon's initial evaluation of overall cosmetic effect immediately upon closure. This was due to the indentation of skin made by the interdigitating pincers. This indentation was not evident in any of the instrument-closed wounds when the dressings were removed at 24 hours.

When used by a surgeon who routinely closes incisions with the subcuticular technique, the instrument facilitated skin approximation in less than half the time of handsewn closures. In a typical laparotomy incision of 15 cm, this represents a skin closure time of five minutes *vs* 11 minutes using the handsewn technique. Surgeons who do not routinely use a subcuticular closure will likely find a significantly greater time savings without the sacrifice of superior cosmetic results. With the exception of the usual wound healing difficulties observed in the patient populations excluded from this initial study and use in patients with extremely thin skin, we anticipate no specific problems inherent in the use of the SQ instrument in these patients. Further study will be needed to confirm this.

Since the conclusion of the 60-week evaluations, over 80 thousand instruments have been used without significant complications or wound abnormalities reported. The instrument cost ($45.00) must be compared against prevailing "per-minute" surgical suite charges ($20 to $30 per minute).

Summary

The subcuticular dermal approximating instrument facilitated skin closures with excellent cosmetic results and patient comfort in half the time of handsewn subcuticular suture closures.

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A Strategy for Precepting Medical Students in Ambulatory Settings

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Introduction

THE clinical training of medical students is rapidly changing as medical schools recognize the importance of preparing graduates for careers that emphasize primary and ambulatory care.[1-12] Not only are schools offering new primary care rotations, but they are also revising traditional core clerkships to include significant ambulatory training. Whether these initiatives succeed in preparing students for modern practice will depend critically on the quality of teaching by ambulatory preceptors.

Ambulatory preceptors face a complex and difficult task. Working in busy settings under rigid schedules, preceptors must orchestrate the student-patient encounter in a manner that is satisfactory for both student and patient.[13] Students need a meaningful role in patient care, vigilant oversight, and constant feedback. Patients desire efficient care from doctors who satisfy their personal concerns. Preceptors themselves need to maintain the quality and efficiency of their practice.

Despite the pivotal role of office-based preceptors in undergraduate education, educators have not fully developed and described strategies to optimize the ambulatory teaching role. Available guidelines for teaching students[14-16] are not sufficiently concise or pragmatic. Guidelines for resident teaching[17-19] are not completely transferable to undergraduate teaching. Students typically have less confidence, clinical skill, and knowledge than residents and, therefore, require more supervision and support.

In this paper we describe a strategy for precepting third- and fourth-year medical students in general medicine offices where physicians must remain efficient and see two or three patients per hour while precepting. The strategy can be used with equal success in hospital-based clinics where faculty teach students without simultaneously seeing patients.

Prerequisites for the Strategy

Students usually enter practices that are designed primarily for patient care, business, or resident training rather than undergraduate education. To fulfill the new teaching mission, certain accommodations or prerequisites must be in place. The first is a separate examination room for the student. This will enable a preceptor to see one patient while the student is seeing another.[20] The second prerequisite is a supportive staff that can facilitate the educational mission of the practice. Receptionists, nurses, and other personnel are in key positions to enhance a student's effectiveness and sense of belonging.[16] The third prerequisite is an academic and managerial leadership that supports the teaching activities of the preceptors. In both medical groups and faculty practices, physicians have competing responsibilities (eg, generation of revenue, teaching of fellows or residents, and provision of service). Unless student education is a priority, it will fail. Finally, there must be a suitable patient mix that adequately represents the population cared for by general internists.

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The Strategy

The overriding objective of undergraduate clinical education is to help students acquire the critical skills and self-confidence necessary to one day become competent, independently-functioning physicians.[18] The most effective and satisfying way for a medical student to develop critical skills and confidence is to act and make decisions[21,22] in the context of meaningful patient encounters.[20,23,24] The strategy we describe allows preceptors to give students a prominent role in patient care with sufficient oversight to guarantee optimal care.

Orientation to the Practice.—To assure effective participation in caring for patients, the student should receive a thorough orientation to the practice, its physical layout, and its operation, including an introduction to every member of the office staff.[14] A proper orientation conveys courtesy and a welcoming attitude that helps the student feel a part of the practice. A student's sense of belonging often translates into better performance.

Creation of a Safe, Respectful Learning Environment.—Effective learning requires a dialogue between teacher and student in which the student is able critically to examine his performance, identify new learning needs, accept advice, and request help. The dialogue is personal and requires a relationship between learner and teacher in which the student feels secure.[21,25] Preceptors can promote a sense of security by speaking respectfully to students and conveying interest in students' personal learning preferences and professional development. Additional strategies include inviting questions and answering them clearly without pejorative innuendos that discourage future disclosure of learning needs. Self-criticism by preceptors and self-disclosure of *their* learning experiences may put students at ease about expressing their own learning needs. Teacher-learner relationships that reinforce the student's sense of security and self-worth are repeatedly identified as key determinants of student satisfaction with teachers.[15,23,26,27]

The requirements for dignity and security do not mean that teachers should refrain from criticism, reprimand, or dialogue intended to change the learner's behavior. They do mean that teachers should conduct these exchanges in a manner that strengthens mutual trust (see "Giving Feedback" below).

Early Discussion of Basic Goals and Expectations.—Nothing kills a clinical experience more quickly than misunderstanding or disagreement between student and preceptor regarding educational goals and performance expectations. Preceptor and student may avoid this misunderstanding by discussing mutual expectations at the beginning of the rotation.[13] Topics to be covered may include: 1) what and how the student expects to learn, 2) what the preceptor expects the student to learn, 3) the student's role in patient care, 4) the preceptor's method of overseeing the student's patient care, 5) the preceptor's expectations for outside reading, and 6) how and when feedback will be given and received. Of these, the most important is the student's role in patient care. Role definition includes the number of patients the student will see per session, specific clinical responsibilities during the patient encounter, and the student's responsibility for follow-up after the clinic visit.

Selection and Introduction of Patients.—Almost always, patients can be selected from among those with regularly scheduled appointments. Calling in "interesting" patients is rarely necessary and is time consuming. Patients with a single problem and no significant cognitive or psychiatric co-morbidity may be particularly appropriate for beginning students. All students enjoy making a diagnosis in a patient who has a new and urgent problem; by facilitating access to care for such a patient (ie, through an urgent visit appointment), students can provide a real benefit to the practice.

Patients may expect to see only their personal physician, not the student.[5,28] Prior to introducing the patient to the student, we recommend the preceptor visit the patient in the examination room briefly to ascertain his agenda and explain the student's role. Asking for the agenda enables the preceptor to decide when student involvement is inappropriate. Student involvement is not appropriate when the clinical problem is not relevant to the student's learning needs, when a patient insists upon seeing only the attending physician, or in rare instances when the student might seriously weaken the therapeutic value of an office visit. Most patients are, however, appropriate for student involvement. We do not commonly ask patients' permission for student involvement, but we always provide opportunities for patients privately to request not to be seen by a student. Patients are likely to be dissatisfied with student involvement if it thwarts their intent to discuss very personal matters with their physician.[28]

In explaining the student's role, preceptors should clearly refer to him or her as "medical student" to avoid misunderstanding about identity or expertise. An appropriate explanation identifies the student as a valued member of the patient-care team working in conjunction with (but not replacing) the preceptor and performing specified tasks, including history taking and physical examination. Preceptors should explain that the patient will be seen first by the student but that the preceptor will return after the history and physical to hear the student's report, review all findings, and speak directly with the patient. Presented in this way, the student will be understood by the patient as contributing to good care. Preceptors should avoid soliciting patients with phrases such as "I'd like to ask a favor

of you" that suggest the student's activities are of little value. Viewed negatively by the patient, the student may be rejected or not taken seriously.

Under special circumstances, patients may not benefit from an initial meeting alone with the preceptor. Examples include patients who are knowingly seeing the student for the second time, patients who have been prepared for first contact with students during telephone conversations with the attending, and patients who have no expectation of seeing a specific provider. In some practices, a nurse or receptionist may have adequately prepared the patient. When students do introduce themselves, they should know to give a full and clear description of their role and the role of their attending. Some preceptors prefer to have students introduce themselves and actively create the special circumstances listed above. The argument is that by seeing a patient first, a preceptor may undermine the student's relationship with that patient.

Preparation of Student for the Patient Encounter.—Most students benefit from previsit guidance to help them focus on appropriate problems, perform a pertinent examination, and arrive at a reasonable differential diagnosis within the limited time available. The scope and content of the guidance should match the student's skill and the complexity and needs of the patient.

In providing guidance, preceptors may briefly describe the patient's medical history and current problems or concerns (if known). When preceptors do provide instruction about the purpose of the visit, however, they must remind students to seek and to be alert for unanticipated patient concerns. Goals for the student's involvement with the patient should be discussed. For most encounters, the goal will be to elicit pertinent historical and physical data, develop a differential diagnosis, suggest a plan for evaluation and management, and write the note.

Goals for the duration of a patient encounter are helpful for most students. By stating clear time goals, preceptors help students become efficient and minimize the prolongation of visit duration that may result from student involvement. The office stays on schedule.

Introduction of Student to Patient.—This introduction can be very brief since student and patient have both been previously informed about each other.

Presentation of Case and Review of Findings.—The student's oral presentation of the history and physical should be terse (no more than three to four minutes). Allowing the student five or 10 minutes prior to the presentation to collect his thoughts and consult texts[29,30] helps to keep the presentation terse, well-informed, and well-organized. The presentation may take place either in the presence of the patient or away. Each location has distinct advantages, although we prefer hearing the presentation in the presence of the patient.

I. In the presence of the patient.—The critical advantage of this location is efficiency. The preceptor is usually able to guarantee the accuracy and completeness of the student's work without feeling compelled to retake the history. Before the presentation, we usually invite patients to interrupt with corrections or additions. In this way, the patient becomes part of a three-way conversation and acts as a check on the student. During the presentation, we try not to interrupt the student by asking questions directly of the patient because this may deprive the student of the opportunity to report spontaneously the needed information. After the presentation, we usually ask a few open-ended questions to confirm that the student has correctly identified the chief issues (eg, "Would you like to add anything to what [student's name] has said?"). Further questions can usually be very focused, covering only essential or missing historical data. Only on occasions when the diagnosis is uncertain or the student is not performing well will the preceptor need to obtain independently the complete history. Unnecessary repetition of the complete history disheartens the student and causes inconvenience to the patient without improving care.

Presentations in the examination room are advantageous for most patients who appreciate knowing that their symptoms and concerns have been accurately reported. Like all "bed-side" presentations, respect for the patient is foremost. Preceptors need to instruct students on appropriate etiquette. Communication of fears and personal data reported by the patient need not be avoided, but discussion of differential diagnosis is usually best done separately, away from the patient (see section "Discussion of Assessment" below).

Presentations in the examination room may also be beneficial for students who should learn to speak respectfully about patients and their illnesses using words patients can understand.

Preceptors should routinely check essential parts of the physical examination to ensure accuracy and demonstrate technique. Patients seem to expect and appreciate the preceptor's examination. Occasionally, it may be appropriate to observe the student perform a component of the examination, although we prefer to do this in separate exercises.

II. Presentation away from the patient.—Presentation away from the patient affords the preceptor an opportunity to provide immediate feedback on the oral presentation. This location is well suited for occasional use with beginning students and others who need help with oral presentation. An additional benefit of the remote location

is that the preceptor can help to identify additional questions that the student can ask when they both visit the patient. When the student asks the questions rather than the preceptor, the student stays involved and the preceptor gains an important opportunity to observe the student's performance.[18]

After the presentation away from the patient, the preceptor and student must visit the patient. The visit is necessary to: 1) guarantee that historical and physical examination data are accurate and complete, 2) satisfy the patient's expectation for personal interaction with the preceptor, 3) observe the student's skills for interviewing and examination, and 4) model skills for the student.

Discussion of Assessment.—Regardless of how the case presentation is conducted, we recommend that student and preceptor meet apart from the patient for five to seven minutes to discuss assessment and agree on a plan for evaluation and treatment. Asking first for the student's assessment and plan is critical for preserving the student's sense of responsibility and engagement, and for providing an opportunity to practice and improve reasoning skills.[31] Only by listening to the student, furthermore, can preceptors assess reasoning skills and clinical judgment. Away from the patient, the discussion between preceptor and student will be less inhibited and incorrect inferences by the student can be managed without affecting the patient or embarrassing the student.

Communication of Assessment to Patient.—When it is time to discuss diagnosis and negotiate management with the patient, preceptors may be tempted to take over from the student. Many preceptors perceive that this communication requires confidence, clarity, and style that students do not yet possess. Unfortunately, this perception may become a self-fulfilling prophesy if students never have the opportunity to learn clarity and style through practice. Rather than preempt students in this important communication, preceptors may use it as an opportunity to observe the student and later (when the patient is gone) provide feedback. Preceptor and student can agree to conduct the communication jointly, with the student taking the lead. To improve performance, preceptors should coach the student on what to tell the patient and how.

When a practice is busy, a prepared student can save the preceptor time by initially meeting alone with the patient to provide detailed information and explanations. The preceptor subsequently joins them to check the patient's understanding and satisfaction before summarizing and concluding the visit. The student maintains a central role in the patient's care and refines his communication skills. The attending, who may chart or see another patient, maximizes his or her efficiency. This alternative strategy is also beneficial for patients who often appreciate a second explanation of their diagnosis and treatment.

Promotion of Specific Learning.—Effective preceptors will seek opportunities to promote specific learning by identifying the learner's needs, asking questions, probing for explanation, and providing feedback.[18] A learner's needs may be identified by direct questioning,[32] by listening to unsolicited requests, or by direct observation of the student's performance. For example, after hearing a student describe and correctly assess a patient with a urinary tract infection (UTI), an attending might ask, "How can I help you with this patient?" The reply might be a request for help performing a urinalysis. If the preceptor had not asked, this learning need might have been missed. Observation of the student discussing the diagnosis of UTI with the patient may later reveal a failure to make eye contact or adequately assess the patient's understanding of treatment. However identified, learning needs should be explicitly acknowledged and discussed. When the need cannot be immediately met, student and attending should formulate a plan for meeting it later.

Although students always have learning needs, they also may know more than is apparent. When preceptors launch into spontaneous lectures or make learning assignments for topics already well-known to a student, learning is inefficient and frustration sets in. Direct inquiry about self-perceived knowledge and brief testing for that knowledge can help preceptors identify areas in which a student's knowledge is already satisfactory.

Questions help students clarify their own reasoning and identify learning needs. Well-constructed questions promote independence by teaching students to be critical, to identify decisions, and to acknowledge cultural or scientific paradigms.[14,18,33,34] Open-ended questions stimulate problem solving, evaluation, or judgment (eg, "What is your assessment of this patient?").[34] Closed-ended questions test recall or ask for explanation (eg, "What is the diameter of a red blood cell?"). Because medical education is substantially about teaching problem solving and judgment, open-ended questions should usually be emphasized.

In promoting learning in the ambulatory setting, efficiency is essential because patient flow must be maintained. A potential pitfall is over reliance on the mini-lecture.[35] Preceptors use mini-lectures to address information deficits identified when students present a patient. Mini-lectures do address learning needs in a timely manner, but they are a passive learning tool that is costly in terms of time, slowing the operation of an office or clinic. The mini-lecture should be used sparingly and only when it is brief, addresses a critical learning need, and directly improves patient care.

Medical students appreciate specific recommendations for problem-based reading. After a day seeing several patients, students may feel uncertain about priorities and

sources for independent reading. We suggest that preceptors routinely make recommendations and check for the student's reading progress by requiring reports on findings. Assignments for independent learning are most effective when there is a meaningful consequence to the student's effort. In particular, students are highly motivated to obtain information that is not currently known either to the preceptor or student and that directly influences a clinical decision.

Although our strategy emphasizes active learning by the student, role modeling is also an effective educational technique.[36,37] It is useful for demonstrating attitudes, interpersonal skills, and examination techniques.

Establishment of Student's Responsibility for Follow-up Care.—A student's most meaningful role in patient care may occur after the patient has left the office. By calling patients to ascertain response to therapy, for example, students provide a valued service to patients and preceptors while learning about disease outcome and patient communication. As another example, the process of gathering, interpreting, and acting upon test results provides a rich learning opportunity. A student who orders a prothrombin time for a patient taking warfarin may be asked to call for the results, decide if a dose adjustment is warranted, confer with the attending, and call the patient. In the process, the student will learn about coumarin monitoring, the international normalization ratio, and patient education.

Responsibility for follow-up should be a central objective of any ambulatory clerkship. Preceptors must actively delegate specific responsibility to students and be available to support students in their subsequent interaction with patients. To avoid therapeutic misadventure, preceptors must tell students not to give unauthorized medical advice.

Review of Patients and Supervision of Independent Study.—During office hours, there is insufficient time for preceptor and student to review all major teaching points pertinent to patients they have seen. A convenient way to review patients without impairing office productivity is for student and preceptor to designate regular meeting times outside of office hours. The student should bring a list of patients, results of testing, results of reading, and questions.

The Special Challenge of Teaching Physical Examination.—In the precepting strategy we describe, students are responsible for independent patient assessment. Unfortunately, when a student works independently, the preceptor does not observe how the interview or physical examination is performed. Without observation, preceptors are unable to provide feedback, correct improper technique, or assess competence. Not surprisingly, students on ambulatory clerkships complain of a lack of instruction in physical examination.[38]

To teach physical examination, some preceptors schedule occasions to observe students performing patient evaluations. These valuable exercises, unfortunately, are time consuming and expensive. At most, a preceptor can do one or two in a month. A more practical solution is to include some instruction on physical examination in almost every patient encounter and to do it during the preceptor's required visit with the patient. In general, this instruction should begin by watching the student demonstrate a reported physical finding or examination maneuver. The preceptor can immediately verify the finding or correct technical errors. Alternatively, the preceptor demonstrates an examination maneuver and then asks the student to repeat it. Always in teaching physical examination, it is important to watch students performing specific maneuvers. Only by watching students can preceptors identify their learning needs. Another key to the success of teaching physical examination is avoidance of teaching too much using any one patient: for each patient, choose only one anatomical area or examination maneuver. Focusing and limiting teaching in this way keeps the office on time. By the end of a rotation, all aspects of the physical examination should have been covered several times.

Giving Feedback.—Feedback is critical for adult learning.[21,22,33,39,40] In clinical education, feedback provides "information describing students' or house officers' performance in a given activity that is intended to guide their future performance in that same or in a related activity."[39] It should target both deficient behavior, so that it is corrected, and effective behavior, so that it is reinforced. For medical students working in offices and clinics, feedback on their performance may come from their own observations and those of their colleagues, patients, or preceptors. While feedback from some of these sources cannot always be assured, preceptors should be a predictable source.

General strategies for providing feedback to medical students and residents have been published.[33,39] During ambulatory rotations in internal medicine, students particularly appreciate feedback that is given immediately after a patient encounter. Behaviors appropriate for comment at this time include the structure and content of oral presentation, communication with the patient, and clinical reasoning. A common mistake is to make all feedback negative; students will come to feel inadequate very quickly unless there is a balance between positive and negative comment. Even negative criticisms may be expressed in hopeful terms that are accompanied by a plan for improvement. Asking students for their own impres-

sions on their performance often obviates direct criticism from the preceptor.

Working with Less Capable Students.—Students with no prior clinical experience, inadequate medical knowledge, or inadequate clinical skill are a special challenge for office-based preceptors. Lacking capability for satisfactory independent work, they require greater direct assistance in all aspects of patient care. While some preceptors balk at taking on these students, others understand that less-capable students simply require adaptive learning programs.[16] Preceptors may consider several approaches: 1) spend more time in orientation and role-modeling so that students thoroughly understand office routines, 2) provide detailed coaching (eg: about appropriate history) before patient visits (consider requiring student to use reference 29), 3) assign fewer patients per session (in our offices, most students see at least two patients per half day), 4) assign less complex patients, 5) do not hesitate to tell the student how to manage the patient's care when the student is unsure or wrong, 6) spend more time with the student outside clinic coaching him on basic skills, communicating your assessment of his learning needs, and emphasizing your commitment to his professional development.

Discussion

The assignment of medical students to ambulatory settings for core clinical training represents a strategic shift in medical education. The success of this shift will depend on how effectively we develop and implement teaching strategies and teaching skills that are suited to the new learning environment. In this paper, we have described a strategy and set of skills that may help ambulatory preceptors enhance their teaching effectiveness. Although the strategy we describe was developed for general internal medicine, we believe that it may also be suitable for many medical subspecialties, pediatrics, family practice, and surgery.

Clearly defined strategies, such as ours, lend themselves to examination and will benefit from testing to document educational effectiveness and effect on patient care. In a pilot study, we have found that a preceptor who uses this strategy can expect to spend 26 minutes assisting a student in the care of one patient .[41] On average, patients remain in the office for one hour. Further research on precepting strategies will facilitate the design and implementation of ambulatory clerkships.

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Mortality Patterns—United States, 1993

IN 1993, a total of 2,268,553 deaths were registered in the United States—92,940 more than in 1992 and the highest number ever recorded.[1] In addition, life expectancy at birth declined for the first time since 1980. This report characterizes mortality patterns in 1993 (the most recent year for which complete data were available)[1] and compares these with patterns in 1992.

National mortality statistics are based on information from death certificates filed in state vital statistics offices as required by state law and are compiled by CDC into a national database. Cause-of-death statistics are based on the underlying cause of death,* which is recorded on the death certificate by the attending physician, medical examiner, or coroner in a manner specified by the World Health Organization (WHO) and endorsed by CDC. Data are presented only for blacks and whites because of inconsistent reporting of other racial/ethnic groups on death certificates.

From 1992 to 1993, the crude death rate increased 3.2% (from 852.9 to 880.0 deaths per 100,000 population); the age-adjusted death rate† increased 1.7% (from 504.5 to 513.3 per 100,000 population). The 10 leading causes of death and their rankings were unchanged during this period; mortality decreased only for cancer (-0.4%) (Table 1).§ The largest increase in age-adjusted death rate (9.5%) was for human immunodeficiency virus (HIV) infection (International Classification of Diseases, Ninth Revision [ICD-9], codes 042-044¶); this rate (13.8) was the highest ever recorded for HIV infection.[1]

From 1992 to 1993, age-adjusted death rates increased 1.6% for whites** (from 477.5 to 485.1) and 2.3% for blacks (from 767.5 to 785.2). Rates were higher for blacks than for whites for eight of the 10 leading causes (Table 2). Race-specific ratios were greatest for homicide (6.8) and HIV infection (4.0). Death rates for blacks were lower for chronic obstructive pulmonary diseases and allied conditions (COPD) (ICD-9 codes 490-496; 0.8) and suicide (ICD-9 codes E950-E959; 0.6).

From 1992 to 1993, age-adjusted death rates increased 1.3% for males (from 656.0 to 664.9) and 2.1% for females (from 380.3 to 388.3). Rates were higher for males than females for all 10 leading causes (Table 2). Sex-specific ratios were greatest for HIV infection (6.3), suicide (4.4), and homicide (3.8). Compared with 1992, sex-specific ratios decreased for HIV infection and homicide. The sex-specific ratio was lowest for diabetes mellitus (ICD-9 code 250; 1.2).

*Defined by the World Health Organization's *International Classification of Diseases, Ninth Revision,* as "(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury

†Age-adjusted to the 1940 U.S. population. Age-adjusted death rates indicate the risk for death relative to a standard population and are more effective than crude death rates for comparing mortality of population groups with different age structures.

§"Motor-vehicle accidents" and "all other accidents and adverse effects" are not included as causes of death for which the rate has decreased because these causes are subcategories of the leading cause "accidents and adverse effects." When a death occurs under "accidental" circumstances, the preferred term within the public health community is unintentional injury."

¶These codes are from addenda to the ICD-9.[2]

** Hispanics and non-Hispanics are included in totals for both whites and blacks.

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Table 1.—Age-adjusted death rates* for 1993 and percentage changes in age-adjusted death rates for the 10 leading causes of death from 1992 to 1993 and from 1979 to 1993—United States

Rank†	Cause of death (ICD-9§ code)	1993 Age-adjusted death rate	% Change 1992 to 1993	% Change 1979 to 1993
1	Diseases of heart (390-398,402,404-429)	145.3	0.7	–27.2
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (140-208)	132.6	–0.4	1.4
3	Cerebrovascular diseases (430-438)	26.5	1.1	–36.3
4	Chronic obstructive pulmonary diseases and allied conditions (490-496)	21.4	7.5	46.6
5	Accidents¶ and adverse effects (E800-E949)	30.3	3.1	–29.4
	Motor-vehicle accidents (E810-E825)	16.0	1.3	–31.0
	All other accidents and adverse effects (E800-E807, E826-E949)	14.4	5.1	–26.5
6	Pneumonia and influenza (480-487)	13.5	6.3	20.5
7	Diabetes mellitus (250)	12.4	4.2	26.5
8	Human immunodeficiency virus infection (042-044)**	13.8	9.5	—
9	Suicide(E950-E959)	11.3	1.8	– 3.4
10	Homicide and legal intervention (E960-E978)	10.7	1.9	4.9

*Per 100,000 population, age-adjusted to the 1940 U.S. population.
†Based on number of deaths.
§*International Classification of Diseases, Ninth Revision.*
¶When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."
**These codes are from addenda to the ICD-9.[2]

In 1993, a total of 302 women were reported to have died from causes associated with pregnancy and childbirth (ie, deaths assigned to complications of pregnancy, childbirth, and the puerperium [ICD-9 codes 630-676]). The overall maternal mortality rate was 7.5 deaths per 100,000 live-born infants. However, this rate was approximately four times higher for blacks than for whites (20.5 *vs* 4.8).

From 1992 to 1993, overall life expectancy (LE) at birth declined from 75.8 years to 75.5 years. As in 1992, LE at birth continued to be highest among white females (79.5 years), followed by black females (73.7 years), white males (73.1 years), and black males (64.6 years). Although LE declined for all four racial-sex groups during 1992-1993, the overall race-specific difference in LE for blacks and whites increased slightly, from 6.9 years in 1992 to 7.1 years in 1993.

Reported by: Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics, CDC.

Editorial Note: LE summarizes death rates by age into a single measure used as an indicator of the nation's health. Death rates and LE can be used to monitor health status and progress toward national health objectives and to identify groups at increased risk for specific diseases and injuries. The findings in this report indicate that, in 1993, crude and age-adjusted death rates increased and LE decreased from 1992. The decline in LE most likely reflects increases in death rates for 1) chronic diseases during the two influenza outbreaks of 1993, 2) pneumonia and influenza, and 3) HIV infection and unintentional injuries. Race-specific variation in death rates are accounted for, in part, by differences in factors such as socioeconomic status, access to medical care, and risk behaviors. The increases in both the crude and age-adjusted rates in 1993 are the first since 1988 and 1975, respectively; however, preliminary analysis of provisional data for 1994 suggest small, but statistically significant, decreases in these rates.[3]

In 1993, death rates for some chronic diseases—heart disease, stroke, COPD, and diabetes—and for pneumonia and influenza accounted for nearly 75% of all deaths during the year. This analysis especially highlights the role of heart disease and cancer as leading causes of death in the United States; these two causes accounted for approximately 56% of deaths in 1993. Although increases in the rates for HIV infection and unintentional injuries

Table 2.—Ratio of age-adjusted death rates* from the 10 leading causes of death, by sex and race of decedent—United States, 1993

Rank†	*Cause of death (ICD-9§ code)*	*Male:Female*	*Black:White*¶
1	Diseases of heart (390-398,402,404-429)	1.9	1.5
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (140-208)	1.5	1.4
3	Cerebrovascular diseases (430-438)	1.2	1.8
4	Chronic obstructive pulmonary diseases and allied conditions (490-496)	1.6	0.8
5	Accidents** and adverse effects (E800-E949)	2.6	1.3
	Motor-vehicle accidents (E810-E825)	2.3	1.0
	All other accidents and adverse effects (E800-E807, E826-E949)	2.9	1.6
6	Pneumonia and influenza (480-487)	1.6	1.4
7	Diabetes mellitus (250)	1.2	2.4
8	Human immunodeficiency virus infection (042-044)††	6.3	4.0
9	Suicide (E950-E959)	4.4	0.6
10	Homicide and legal intervention (E960-E978)	3.8	6.8

*Per 100,000 population, age-adjusted to the 1940 U.S. population.
†Based on number of deaths.
§*International Classification of Diseases, Ninth Revision.*
¶Both groups include Hispanics. Numbers for other racial/ethnic groups were too small for meaningful analysis.
**When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."
††These codes are from addenda to the ICD-9.[2]

among younger persons contributed to the decline in LE, most increases in mortality were among persons aged ≥65 years.

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Selective Serotonin Reuptake Inhibitors in the Treatment of Mood Disorders in Primary Care: Depression and Premenstrual Syndrome

THOMAS R. ALLAN, M.D. AND LAURENCE GOLDSTEIN, M.D.

Introduction

MOOD is a sustained internal emotional tone perceived along a continuum of "sad to happy." Mood disorders comprise two distinct disorders, major depression and bipolar disorders. Major depression is one of the most common and, perhaps the most serious illness in primary care, and it is as disabling as many chronic diseases such as hypertension, diabetes, arthritis, and coronary artery disease.[1] It is a primary cause of disruption in family, employment, and social functioning. Depression often presents with physical symptoms in general medical care; and 50% to 82% of cases are not recognized.[2]

This review will outline the diagnosis of major depression and review the use of selective serotonin reuptake inhibitors (SSRIs), pharmacologic agents that have revolutionized the treatment of depression. These drugs are safer and better tolerated than the tricyclic antidepressants with probably greater efficacy in the often milder depression seen by the primary care clinician. They are (as yet) a largely unused asset for the primary care physician. Bipolar depression is less common, occurring in about 1% of the population, and the patient with this diagnosis is usually referred to the psychiatrist. The pharmacologic management of bipolar depression will not be reviewed here.

Large epidemiologic and family studies suggest that depression is increasing in the U. S. and occurring at a younger age.[3] Although point prevalence rates of 2% to 9% are cited in the Diagnostic and Statistical Manual of Mental Disorders—fourth edition (DSM-IV),[4] a recent national survey found a 12-month prevalence of major depression of 7.7% in men and 12.9% in women.[5] Depression is known to occur twice as commonly in women as in men, with the lifetime prevalence in women of major depression as high as 25%.[6] Accordingly, physicians who treat women, internists, family practitioners, and obstetrician gynecologists, should be knowledgeable in the diagnosis and treatment of this medical disorder. Although investigations to date have generated many "nature" and "nurture" hypotheses, the cause of the predisposition for depression in women is unknown.[7] Some researchers have suggested that the answer to this puzzle may come from the study of a cyclic mood disorder limited to women, premenstrual syndrome.

Severe premenstrual syndrome, in DSM-IV, is accorded a new name under mood disorders, premenstrual dysphoric disorder (formerly late luteal dysphoric disorder). Premenstrual syndrome (PMS), like depression, is common with a similar prevalence and has many other similarities with depression. Both conditions are characterized by similar affective symptoms such as irritability and anxiety, with an increased risk of concurrence of both disorders. Approximately 50% or more of patients presenting with severe PMS have or have had major depression.[8] Furthermore in both depression and PMS, dysfunction in neurotransmitters such as serotonin have been reported[9-11] and serotonin reuptake inhibitors have been clinically effacious in both disorders.[12] SSRIs are now recognized as the first effective treatment for severe PMS,[13] and this review will discuss their use for PMS in primary care.

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The Syndrome of Major Depression

The diagnosis of major depression is blurred if one's perception of depression is as a symptom rather than a syndrome. A syndrome consists of signs and symptoms related to one another by some underlying biologic abnormality.

In the syndrome of major depression, a fundamental pathologic process in the central nervous system produces a clinical disruption of a biochemical, somatic, affective, and psychologic character. The exact causal basis for mood disorders is unknown. Extensive research has identified genetic, biological, and psychosocial factors that are thought to interact. Numerous studies have reported distinct biologic abnormalities, such as changes in sleep EEGs and levels of biogenic amines; and the recent introduction and efficacy of SSRIs have intensified interest in serotonergic dysfunction as a factor. Investigations of the role of serotonin in depression are extensive; and reviews of the biochemical aspects of depression are recommended.[6,14,15]

In spite of the extensive research data indicating biologic abnormalities, there are, to date, no laboratory findings that are diagnostic of major depression. The diagnosis of major depression is made by interviewing the patient, keeping in mind the criteria for major depression as specified in DSM-IV. These include five (or more) of the following symptoms present during a two-week period (of which at least one of the first two symptoms must be present): 1) depressed mood most of the day, nearly every day; 2) markedly diminished interest or pleasure in all, or almost all activities; 3) weight loss or weight gain or change in appetite; 4) insomnia or hypersomnia; 5) psychomotor agitation or retardation; 6) fatigue or loss of energy; 7) feelings of worthlessness or excessive or inappropriate guilt; 8) diminished ability to think or concentrate, or indecisiveness; and 9) recurrent thoughts of death or suicidal ideation. The five or more symptoms must cause significant distress or social or occupational impairment and must not be due to a substance (drug abuse or medication) or a general medical condition (eg, hypothyroidism) to fulfill the criteria for depression.

Untreated, the average episode of major depression lasts six to 13 months; but 50% to 75% of patients who recover have a subsequent episode within five years, and 30% or more have a prolonged course or incomplete recovery.[4,6] Major depression may be a chronic or recurrent disease.

Depression in Primary Care

The key to treating depression in primary care is the willingness and ability of the physician to diagnose. The physician must recognize depression as a clinical illness and not, incorrectly, as the result of weakness of character or over-reaction to the normal stresses of life. The frequency of diagnosable psychiatric disorders in primary care visits varies from 11% to 36%.[16] Further, the majority of people with emotional disorders are seen and treated in primary care settings rather than by psychiatrists.[2]

In primary care, depressive symptoms occur in 12% to 25% of patients; and the prevalence of major depression varies from 6% to 10%.[2] Depression is so common that the possibility should be borne in mind by the physician at all times. In everyday practice, patients do not present with affective symptoms or emotional distress; they present with somatic complaints. The patient does not state that she or he "is depressed"; the complaints are, more likely, to include such symptoms as fatigue, chronic pain, insomnia, and anxiety. Talley has emphasized five symptoms that are common in patients with depression: 1) fatigue, 2) chronic pain, 3) chronic gastrointestinal complaints, 4) anxiety, and 5) sleep disorders.[17] He emphasizes that the presence of two or three of these major symptoms makes major depression the most likely diagnosis; and if but one is present, the possibility of major depression remains significant. Anxiety, in fact, is a common symptom of depression, affecting as many as 90% of all depressed patients.[6] Certain somatic symptoms and previous diagnoses, are often associated with depression: headache, low back pain, chronic pelvic pain, multiple sites of chronic pain, PMS, dizziness, tinnitus, temporomandibular joint arthralgia (TMJ), and the symptoms associated with chronic fatigue syndrome, irritable bowel syndrome, and hypoglycemia.

Major depression should have a prominent position in the differential diagnosis of these symptoms and the DSM-IV criteria should be kept in mind. A modification of a mnemonic developed at Harvard is useful for recalling the nine criteria for depression for direct screening during the primary care interview. The "prescriptive" mnemonic is: "SIG: E+M CAPS". The letters stand for Sleep disorder; diminished Interest or pleasure; excessive Guilt; loss of Energy, or fatigue; Mood disturbance; inability to Concentrate; Appetite disturbance, either lack of hunger or overeating; Psychomotor changes; and Suicidal ideation. Experience with history taking for these nine items is the cornerstone of diagnosis and subsequent treatment. Some clinicians after screening with an interview prefer to give the patient a short written questionnaire such as the Zung Self-Rating Depression Scale or the Beck Depression Inventory. Recently, PRIME-MD, developed by Robert Spitzer, M.D., (available from Pfizer), has become available; and the mood module section may be used with the patient to help confirm the diagnosis and educate the patient.

It is important in the screening and diagnosis of depression to assess all patients for risk of suicide. The specific open-ended question technique and evaluation for risk factors are reviewed in standard references.[6,17] If there is any question about the patient's suicidal risk, consultation should be made with a psychiatrist before the patient leaves the office.

Treatment of Major Depression

The initial step in the actual treatment of major depression in primary care is the education of the patient. Emphasis on the biochemical nature of the disorder is of prime importance in the care of the patient. The interaction of genetic vulnerability and psychosocial stress with neurochemistry should be discussed, but the final common factor of a "dysfunction or deficiency of neurotransmitters" is the concept to teach.

Clinicians explain these concepts in various ways. Some illustrate the biogenic amine dysfunction in depression by comparing this disorder to a well-known endocrine disease such as hypothyroidism or diabetes; other practitioners actually draw a synapse and convey the concepts of neurotransmitter interaction and receptors. Patients often want to know why this is happening to them now. They should be told, frankly, that in truth we do not know; but the role of genetics and stress is important and important to the patient. The role of chronic stress and the neurologic process of kindling[6] often is informative and seems to be relevant to the patient. Kindling is a biological mechanism that may explain sensitivation and progression of behavioral disturbances. Kindling originally referred to research in laboratory animals showing that repeated subthreshold electrical current stimulation led to the development of electrical after-discharges and finally major brain seizures. Further research in animals and humans suggested that repeated "subthreshold" stimulation of the brain with pyschosocial stressors of specific frequency and intensity can result in progression of behavioral disturbances and psychopathology. Research in kindling may have wide-ranging implications for both the etiology and treatment of human behavior and psychopathology. The use of handouts, articles, and other educational materials are useful for education but also can serve as a support to the diagnosis and treatment. Some useful handouts include the pamphlet "Let's Talk Facts About Depression" (available through the American Psychiatric Association, 1400 K St., N.W., Washington, D.C.) and an article entitled "The Good News About Depression" from Newsweek on Health, Summer, 1987 (available from Thomas R. Allan, M.D.). A recommended paperback is *Overcoming Depression* by Demitri Papolos and Janice Papolos published by Harper Collins.

Physicians, as well as the general public, often believe that major depression can be treated in sufferers by suggesting an increase in activity, trying a change of scenery, or concentrating on happy aspects of their lives. While these are good general preventative health prescriptions, they, in general, do not work for major depression.

After diagnosis and initial efforts at education of the patient, a decision should be made with the patient as to whether treatment should be by the primary care physician or by a mental health professional, usually a psychiatrist. This will depend on the interest and ability of the physician, the severity of the illness, and patient preference; but in reality, unless the primary care physician offers treatment, there most often will be no treatment. "The answer does not lie in referral to mental health specialists."[16] There simply are too few and many patients will not comply with referral. "Any realistic hope of change must rest on improving the quality of care in the medical sector."[16]

Management of many patients with depression by the primary care physician by a combination of supportive psychotherapy, encouraging social support, and antidepressants is an appropriate standard of care. Most antidepressants are currently prescribed by nonpsychiatric physicians,[18] and the newer selective serotonin uptake inhibitor antidepressants with fewer side effects make treatment by the primary care physician much simpler. A close relationship with a psychiatrist may be encouraged for consultation, education, and appropriate referral.

Selective Serotonin Uptake Inhibitors in Major Depression

Approximately 20 antidepressants are currently available in the United States, a bewildering array for the primary care physician (Table 1). Because of their greater safety, more favorable side-effect profile, and ease of administration with greater compliancy, SSRIs have become the pharmacologic agents of first choice for depression.[6,19,20] The three drugs available for depression in the U. S. are fluoxetine, sertraline, and paroxetine. Fluvoxamine, currently, has received FDA approval only for the treatment of obssessive-compulsive disorder. The SSRIs selectively block the reuptake of serotonin with little or no effect on norepinephrine and dopamine and little side effects from the blockade of cholinergic, histaminergic, or adrenergic receptors. Compared to tricyclic antidepressants the number of patients who stop medication due to side effects is reduced by 50%.[19] The SSRIs do have some side effects such as gastrointestinal disturbance (eg, nausea, diarrhea), effects related to CNS stimulation such as insomnia, agitation, or anorexia; and miscellaneous effects such as headache, and lethargy. The

Table 1.—Antidepressants Currently Available in the U.S.		
Class	***Generic Name***	***Trade Name***
Monoamine oxidase inhibitors		
	Phenelzine	Nardil
	Isocarboxazid	Marplan
	Tranylcypromise	Parnate
Tricyclic and tetracyclic antidepressants		
	Secondary amines	
	Desipramine	Norpramin, Pertofrane
	Maprotiline	Ludiomil
	Nortriptyline	Pamelor, Aventyl
	Protriptyline	Vivactil
	Tertiary amines	
	Imipramine	Tofranil and others
	Amitriptyline	Elavil and others
	Trimipramine	Surmontil
	Doxepin	Sinequan, Adapin
	Amoxapine	Ascendin
Selective serotonin reuptake inhibitors		
	Fluoxetin	Prozac
	Sertraline	Zoloft
	Paroxetine	Paxil
	Fluvoxamine	Luvox
Miscellaneous atypical antidepressants		
	Trazodone	Desyrel and others
	Nefazodone	Serzone
	Bupropion	Wellbutrin
	Venlafaxine	Effexor

incidence of common adverse effects reported with fluoxetine, for example, are headache, 20%; nervousness, 15%; insomnia, 14%; drowsiness, 12%; nausea, 21%; diarrhea, 12%; anorexia, 6%.[6] Sexual dysfunction has been reported in at least 5% of patients. Often these effects are self-limited and can be managed by a temporary reduction in dosage.

Another advantage of the SSRIs for clinical practice and primary care is that the starting dosage (especially for fluoxetine and paroxetine) is often effective and there is little need for increasing dosage as compared to the tricyclics. Successful response to treatment with SSRIs usually is achieved three to four weeks after therapy begins. The usual starting and maximum dosages for fluoxetine, sertraline, and paroxetine are given in Table 2.

Unlike the tricyclic antidepressants, the SSRIs are not lethal in overdose, although some deaths have occurred in overdose combination with other drugs or alcohol. The half-life of paroxetine is 21 hours; sertraline has a half-life of 26 hours and its metabolite is 62 to 104 hours. Fluoxetine has a prolonged half-life of one to three days and four to 16 days for its metabolite. When switching from a monoamine oxidase inhibitor to a SSRI, the physician should institute a washout period of at least two weeks before beginning the new medication. When switching from a fluoxetine to a monoamine oxidase inhibitor, a longer washout period of at least five weeks is required. The SSRIs are inhibitors of the hepatic isoenzymine P4502D6 and may cause increases in the plasma levels of some drugs, including tricyclic antidepressants and neuroleptics.

Patients should be given information on the response rate, side effects, and safety of SSRIs. They should be seen at regular, usually one to two week, intervals and response should be evident in three to four weeks. Up to 75% of patients respond to SSRIs[19] which is comparable to tricyclic antidepressants with less drop-out due to side effects, especially in the mild to moderate severity of major depression seen in primary care. Treatment with an SSRI should be continued for six to 12 months, and longer in patients with recurrent disease. Patients who are nonresponders should have psychiatric referral.

In summary, the safety and efficacy of the SSRIs allow primary care physicians to more effectively treat major depression. Currently, the SSRIs are clearly first-line drugs of choice for treating this disease.[6,19,20] The place of SSRIs in the treatment of other mood disorders such as dysthymia, minor depression, and mixed anxiety-depression is under investigation.

Table 2.—Serotonin Selective Reuptake Inhibitors Approved by FDA for Depression				
SSRI	***Capsule/Tablet Strength***	***Starting Dose***	***Usual Effective Dose***	***Maximum Dose***
Fluoxetine (Prozac)	10mg capsule 20mg capsule	20mg/d morning	20mg/d	80mg/d
Sertraline (Zoloft)	50mg tablet 100mg tablet	50mg/d morning or evening	100-150mg/d	200mg/d
Paroxetine (Paxil)	20mg tablet 30mg tablet	20mg/d morning	20mg/d	50mg/d

PMS and SSRIs

The standard textbook of gynecology defines premenstrual syndrome (PMS) as "a group of symptoms, both physical and behavioral, that occur in the second half of the menstrual cycle and that often interfere with work and personal relationships."[21] DSM-IV uses the term premenstrual dysphoric disorder (PMDD).[4] PMDD is basically PMS that has been prospectively confirmed with daily ratings for two cycles and is severe enough to interfere with work, usual activities, or relationships. For PMDD five of 11 possible symptoms must be present and at least one of them must be depressed mood, anxiety, lability, or irritability. The other symptoms include decreased interest in usual activities, difficulty concentrating, marked lack of energy, food cravings or changes in appetite, hypersomnia or insomnia, a sense of being overwhelmed, and other symptoms such as breast tenderness and headaches. Prospective charting and evaluation indicate that approximately one-half of women who present with PMS have premenstrual exacerbation of another disorder, particularly a psychiatric disorder such as depression. Although the prevalence of PMS has varied according to study criteria, the prevalence by the defined criteria for PMDD or severe PMS is 4% to 8%.[12]

Even though the symptoms of PMS coincide with the menstrual cycle, extensive studies of the multiple hormonal systems that vary with the menstrual cycle have not revealed any consistent findings in patients with PMS compared with controls. Recent studies have, as noted, concluded that there is altered serotonin function in women with PMS.[9-11]

Although physical symptoms may be treated with specific drugs (such as the diuretic spironolactone for fluid retention), the present first-line treatment for severe PMS are SSRIs. Fluoxetine was the first SSRI approved for use in the U.S.; and soon after its introduction for depression in 1988 some patients initially given fluoxetine for depression also observed marked improvement in severe premenstrual symptoms. Subsequent trials of fluoxetine in women with severe PMS also indicated significant efficacy.[22] Several controlled studies including a large multi-institutional study[12] and a long-term study[23] have shown the efficacy of fluoxetine for the treatment of PMS. The mean improvement in symptoms reported by patients is four to six fold. Recent controlled studies have also shown efficacy of sertraline[24] and paroxetine[25] in the treatment of PMS. The dosages and administration for these agents is the same as for depression. In contrast to the situation a few years ago, the availability of these effective treatments for PMS is an important advance.[13]

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The Duty of Health-care Professionals to Third Parties in Tarasoff-type Cases: As a Health-care Provider in Connecticut Do I Have a Duty to Warn?

ELLIOTT B. POLLACK, ESQ. AND MARY ALICE MOORE LEONHARDT, ESQ.

A DECISION by California's Second District Court of Appeals, which could have significance in Connecticut, holds physicians and other health-care providers to the highest standard of care when treating patients with communicable and infectious diseases such as ARC, AIDS, hepatitis, etc.

The Developing Legal Rules.

According to *Reisner vs Regents of the University of California,* (26 January 1995), a health-care provider has a duty to warn AIDS patients of the risk they pose to others and to advise patients how to prevent the spread of contagious diseases. *Reisner* is significant because it increases a provider's duty to avoid foreseeable harm by extending liability to third persons with whom the health-care provider does *not* have a professional relationship and whose identities are unknown to the provider and are not readily ascertainable.

The *Reisner* plaintiff was infected by a young woman who had *not* been warned that she had received an HIV-tainted blood transfusion during surgery. Although the surgeon and the hospital had informed the donor, no one told the patient who had received the transfusion. Five years later, shortly before she died, the patient had finally learned the truth and immediately told her boyfriend. The boyfriend brought suit after he became HIV positive. The California court held the surgeon liable to the boyfriend for failure to warn the patient or her parents that she might develop AIDS and to inform her about precautionary measures to prevent the spread of the disease.

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Reisner represents a significant expansion of the duty to warn doctrine established in the landmark 1976 case, *Tarasoff vs Regents of the University of California,* which came to court after the murder of a woman by a patient who had made specific threats against her to his treating psychotherapist.

Tarasoff held that when a therapist determines (or pursuant to the standards of the profession should determine) that his patient presents a serious danger of violence to another, he is obligated to use reasonable care to protect a known or ascertainable victim against such danger. Discharge of this duty may require him to warn the intended victim or others likely to apprise the victim of the danger, notify the police or take whatever other steps are reasonably necessary under the circumstances.

In addition to *Tarasoff, Reisner* also cited another California decision, *Myers vs Quesenberry,* which extended the *Tarasoff* duty to warn to a foreseeable but *not readily identifiable victim. Myers* dealt with a diabetic who was permitted to drive to the hospital after her physician advised her that her fetus had died. The patient lost control of her car during an insulin reaction and struck the plaintiff who suffered serious injuries. The court held that the physician should have warned the patient not to drive. The *Myers* court did not condition liability for failure to warn on a potential victim being known or readily identifiable. The court held that a timely warning to the patient probably would have prevented the plaintiff's injury.

Although *Reisner* raises an issue of first impression, it is likely to be followed by courts in other jurisdictions consistent with the trend towards a broad interpretation of the *Tarasoff* rule.

Impact on Connecticut Providers

Currently, health-care providers in Connecticut who obtain confidential HIV-related information are prohibited by law from disclosing or being compelled to disclose such information unless one of the statutory exceptions applies.[1] Disclosure by Connecticut physicians and state public health officers of confidential HIV-related information is governed by General Statutes §19a-584.[2]

Connecticut courts have offered little guidance as to how *Tarasoff, Myers,* or *Reisner* might apply. However, in 1994, in *Fraser vs United States,* the United States Court of Appeals for the Second Circuit[3] requested guidance from the Connecticut Supreme Court as to whether our state recognizes a general duty on the part of a psychotherapist to control a patient to prevent harm to third persons.

Fraser involves a suit against a Veteran's Hospital by the family of the deceased who was fatally stabbed by an employee who was receiving outpatient psychiatric treatment at the facility. The lower federal court ruled that the Veteran's Hospital did not have a special relationship with the patient under applicable Connecticut law that would support the imposition of a duty to the general public. The Connecticut Supreme Court is expected to respond to the Second Circuit this year.

A more recent case before the Connecticut District Court, *Almonte vs New York Medical College,* presents claims of negligence and failure to warn arising from an alleged sexual assault of a child by a physician who had disclosed to his medical school instructor/analyst that he was a pedophiliac. Judge Nevas cited *Tarasoff* in support of his preliminary ruling that the plaintiffs had alleged sufficient facts upon which a court could find the instructor/analyst and the medical school had a duty to warn the child's parents.

Recommendation

If a patient with a communicable or contagious disease poses a risk to the health of others, prudence dictates that the highest standard of care be met by warning the patient of the risk to others, including advising how to prevent the spread of the disease.

Mental health care providers face even more difficulty in balancing their obligations of care, confidentiality and notice. Each matter requires careful individual examination.

REFERENCES

Reisner vs Regents of the University of California, 31 Cal. App. 4th 1195 (1995).

Tarasoff vs Regents of the University of California, 17 Cal. 3d 425 (1976).

Myers vs Quesenberry, 144 Cal. App. 3d (1983).

Fraser vs United States, 30 F.3d 18 (2d Cir. Conn. 1994).

Notes

[1] Connecticut General Statutes §19a-583 permits disclosure by persons who obtain confidential HIV-related information if certain criteria set forth under the applicable exceptions(s) are met to the following: 1) the protected individual, his legal guardian, or a person authorized to consent to health care for such individual; 2) any person who secures a release of confidential HIV-related information; 3) a federal, state, or local health officer; 4) a health-care provider or health facility; 5) a medical examiner; 6) health facility staff committees or accreditation or oversight review organizations; 7) a health-care provider or other person in cases where such provider or person in the course of his occupational duties has had a significant exposure to HIV infection; 8) employees of hospitals for mental illness operated by the department of mental health and addiction services; 9) employees of facilities operated by the department of correction; 10) any person allowed access to such information by a court order; 11) life and health insurers, government payers and health-care centers and their affiliates, reinsurers, and contractors, except agents and brokers, in connection with underwriting and claim activity for life, health, and disability benefits; and 12) any health-care provider specifically designated by the protected individual to receive such information received by a life or health insurer or health-care center pursuant to an application for life, health, or disability insurance.

[2] Connecticut General Statutes §19a-584 permits, but does not require, disclosures by physicians concerning confidential HIV-related information to 1) a known partner only where both the partner and the protected individual are under the physician's care, where the physician reasonably believes there is a significant risk of transmission, and the physician has informed the protected individual of his intent to make such a disclosure to the partner; and 2) a public health officer for the purpose of informing or warning partners of the protected individual that they may have been exposed to the HIV virus.

[3] This court hears appeals from federal trial courts in New York, Connecticut, and Vermont.

Communion

RICHARD B. WEINBERG, M.D.

I AM not an intimidating person, but I found my last patient of the day huddled in the corner of the examining room, as if awaiting an executioner. She was in her mid-twenties, and she clutched a sheaf of medical records against her chest like a shield. She had made the appointment to our clinic herself. The face sheet on her chart said "chronic abdominal pain."

I introduced myself, sat down, and began to take her history. She had had severe abdominal pain since her mid-teens, but her description of the pain was so vague that no specific diagnosis sprang to mind. And her records disclosed that other physicians had fared no better: She had been seen at every major gastroenterology clinic in town, had gone through all the tests, and had tried all the medicines. What, I asked myself, kept her trudging from doctor to doctor on this medical odyssey? And what could I possibly do for her?

As I questioned her, I studied her with growing fascination. She was anxious and withdrawn, but nonetheless she projected a desperate courage, like a cornered animal making a defiant last stand. She kept her gaze directed downward, but every now and then I caught her staring at me intensely, as if searching for something. She wore a drab, bulky sweater and oversized bluejeans, and her unkempt hair fell over her eyes. It struck me that she deliberately had done everything possible to obscure the fact that she was a very attractive young woman.

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Requests for Reprints: Richard B. Weinberg, M.D., The Bowman Gray School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157.

She seemed so uncomfortable talking about herself that I moved on to inquire about her family history. Her parents had emigrated from Italy. Her mother had died when she was a young girl, and although she was not the oldest child, it had fallen to her to play the role of mother to her five siblings. She was a devout Catholic, who, like her mother, attended Mass every morning. "But I don't take communion," she added. Her father was a baker, and through years of hard work now owned his own bakery, which she managed.

Now, cooking is my hobby, but baking is one culinary skill I have never mastered. So I was always on the lookout for good bakeries, for they are not easy to come by. I asked where her bakery was and if they made French pastries, one of my weaknesses. They did. "Are they as good as the French Gourmet Bakery's?", I asked, mentioning the name of a popular place near the medical center. "I'm addicted to their Napoleons."

For the first time her eyes came alive. "I wouldn't feed pastries from the French Gourmet Bakery to my cat," she retorted. "The French learned all they know about baking from the Italians," she informed me with an artisan's pride. "It's not as easy to make Napoleons as it looks—it's very tricky," she said, with a tone of voice that implied that she knew the secret, but she was certainly not about to tell me. Her passionate outburst took me by surprise, but it faded away as quickly as it had appeared. The remainder of the interview was monosyllabic.

Her physical examination was entirely normal. I told her that I thought she most likely had a severe form of irritable bowel syndrome. She listened carefully, but said nothing. I prescribed a bland diet and the one antispasmodic she had yet to try, and asked her to return in one month. I was not optimistic.

I really didn't expect to see her again, but she reappeared the next week. As before, she sat silently in the examining room, and responded to my questions with terse replies. Because she had become so animated talking about the bakery the week before, and because baking seemed to be the only point of contact I had established with this otherwise withdrawn young woman, I spent most of the visit asking her about Italian pastries: which ones sold on which holidays, what kind of yeast worked best, the recipes her father had brought from Italy. She was very knowledgeable. She didn't mention anything about abdominal pain. I made another return appointment for a month later.

Again she returned the next week. This time she seemed a bit more at ease, but I noted the dark rings under her eyes. "Are you sleeping well?" I inquired.

"No."

"Why?"

"Because I have a nightmare."

"A nightmare? The same nightmare every night?"

"Yes."

"Can you tell me about it?" She was silent for some time, and then took a deep breath, as if she had made a decision. Then, in a barely audible monotone, she described her dream: She is running, because she must get to confession before the priest leaves. But when she enters the church it is empty, dark, cold. She calls out, but there is no answer. Suddenly, unseen acolytes seize her and drag her to the altar. Her head is pulled back and holy water is forced down her throat to drown her screams. She struggles to raise her head and sees a procession of hooded priests holding long candles headed up the aisle toward her. I shuddered as I listened to her; the implication of the lurid imagery was inescapable.

"Were you ever sexually assaulted?" I asked gently.

"Yes."

"When?"

"When I was fourteen." She was breathing now in short, rapid gasps. I didn't know whether to continue or not. Her eyes said yes.

"What happened?" With great effort she told me. She had been raped by her oldest sister's boyfriend. He had come to the bakery late at night in search of her sister, but had found her instead. "There's nothing dirty he didn't do to me," she sobbed, and now unstoppable, she poured out the grim details of her ordeal.

"You never reported it?"

"No."

"You never told anyone?" She looked up at me with an imploring face. "How could I tell anyone ... it would kill my father and destroy my family," she wept. "You're the only person I've ever told."

I felt completely out of my depth. I consoled her as best I could, and when her sobbing had subsided, I gently suggested a referral to a psychiatrist or a rape counselor. I'm a gastroenterologist, I told her, this is not my area of expertise. I had neither the knowledge nor the experience to help her, I explained. But she adamantly refused to consider a referral to anyone else. She didn't trust them. I then understood that having unearthed her dark secret, I had become responsible for her care.

So I scheduled weekly visits late in the day so she could talk as long as she wanted. I mostly listened. After the rape she had felt soiled and defiled, and inexplicably had felt a powerful need to be punished further for her "sin." She could no longer take communion. For weeks after her assault she could not eat. But then, insidiously, she fell into a ritual of penitence: She would sneak into the bakery late at night and stuff herself with pastries, then purge herself, and repeat the process until her stomach ached and she was exhausted. She was helpless to stop, for her bingeing ritual expiated her guilt and shame, albeit only briefly.

She seemed to derive great strength from the visits. When discussion became difficult, we talked about baking. I spent many evenings in the medical library reading as much as I could about rape and eating disorders. There was not much written, and after a while it seemed that I was learning more from my patient than from the clinical journals. Still uneasy with my unaccustomed role, I discussed her case with a colleague in the psychiatry department.

"Is she comfortable talking with you?" he asked.

"Yes."

"Does she seem to be getting better?"

"I think so."

"Then you're doing just as well as we could," he declared.

The visits continued, and as the months passed I noted subtle but unmistakable changes: Her anxious look vanished and she began to smile; she gained some weight and remarked that she thought it made her look better; a touch of makeup appeared; she came to the clinic with a new hairstyle; she informed me that she had returned to school part-time and had received her high school diploma. She announced that she was taking communion again. Her visits came at longer and longer intervals.

I hadn't seen her for three months, when she appeared just as I was about to leave the clinic. At first I didn't recognize her, such was the extent of her transformation. She was vibrant, alive. And she looked beautiful—elegantly attired as if for a night on the town. I realized she had dressed up for me. I also sensed that something was completed, that this was a leave-taking. We sat down in the empty waiting room.

"I'm quitting the bakery," she told me. "I'm going to travel to Italy this summer, and when I get back I'm going to start college full-time. I wanted to see you before I left so I could bring you these," she said, handing me a white cardboard box, carefully tied with a bright ribbon. "Should I open it now?" I asked. She nodded.

Inside the box, neatly resting on individual doilies, were six perfect Napoleons, the pastry puffed high, the fondant a smooth glassy sheet, the chocolate chevrons meticulously aligned. "My father usually makes these, but he sometimes doesn't get it just right. I made these myself just for you," she said. I smiled and thanked her for her kindness. We talked a bit about her forthcoming trip. Then she stood to go.

"Thank you for believing in me," she said.

"I should say the same," I replied.

A thin film of tears shone in her eyes. She leaned toward me and kissed my cheek. "Goodbye," she whispered, then whirled down the hall to the elevator. Just as the doors opened, she turned back and flashed me a radiant smile that warmed me like the sun. "Don't eat them all at once," she said with a mischievous twinkle in her eye. "It's not healthy, you know."

"A doctor doesn't choose his patients," the grey-haired professor who taught me physical diagnosis would say. "It is the patient who chooses the doctor." I had been chosen to receive a gift of trust, and of all the gifts I had ever received, none seemed as precious. That afternoon, I left the clinic feeling exhilarated and full of love for my profession. That evening, after dinner, I opened my present and partook of the communion from the baker's daughter.

CPRO, Beth Israel Hospital Join to Validate the Complications Screening Program

The Connecticut Peer Review Organization, under contract with Beth Israel Hospital in Boston, Mass., will work with Connecticut hospitals to validate the Complications Screening Program (CSP). Funding for this project is provided under a grant from the federal Agency for Health Care Policy and Research. The CSP was developed by Lisa Iezzoni, M.D., M.Sc., and her colleagues at Beth Israel and Harvard Medical School. Collaborating with Dr. Iezzoni and CPRO will be researchers at the Harvard School of Public Health and the California Peer Review Organization (California Medical Review Inc.).

The CSP uses readily available discharge abstract data to help hospitals identify opportunities for quality improvement, focusing upon inpatient complications. Analyzing hospital discharge data represents the least-intrusive method for determining potential improvement areas. The CSP software builds an empirical model of expected complication rates using diagnoses and other data reported in Medicare discharge data. The expected rate of complications is then compared to the actual rate of complications calculated from the discharge data.

Potential areas for improvements are those in which the actual rate of complications exceeds the expected rate of complications. The CSP tool is a form of pattern analysis in which billing data representing aggregate care (care given to many patients) are examined. This study seeks to assess whether the CSP, a tool which uses billing data, can identify potential areas for quality improvement.

Validation of the CSP involves several steps. First, the study examines the accuracy and completeness of the coding complications. Idiosyncratic variations in coding may affect the CSP results and interpretation. Second, since a complication rate is calculated from many individual cases, the study looks at the care delivered to specific cases. In this portion of the study, CPRO will look at individual hospital cases flagged by the CSP to determine whether or not a complication occurred, and whether processes of care contributed to the complication.

Questions about the CSP project should be directed to Kathleen Warren, Associate Executive Director, CPRO. (860) 632-2008.

Commentaries

Patients Are Still Suffering Needlessly at the End of Life

A friend of mine, whose husband was dying of a brain tumor, complained to me that she was unable to get him placed into a experimental protocol that entailed inserting radiation plaques into his skull. She knew of another individual with a brain tumor who was receiving this "advanced" treatment. My response to her was that her husband was the lucky one because his death would be much more comfortable. Several months later, when both the afflicted patients had passed away, she told me I was right.

A recent study published in *JAMA* reported that, in spite of numerous legislative efforts, we physicians still continue needlessly to give our patients uncomfortable deaths. The study analyzed the treatment of over 9,000 patients with terminal diseases such as metastatic lung cancer, end-stage emphysema, end-stage heart failure, and coma.

The results were discouraging. Fifty percent of doctors did not even know that their patients did not desire cardiopulmonary resuscitation. Thirty-eight percent of patients spent over 10 days in intensive care units, and 30% reported that they were in moderate or severe pain in their final days of life. The study concluded that "to improve the experience of seriously ill and dying patients ... more proactive and forceful measures may be needed."

The media attributed the study's results to the medical profession's arrogance and persistent attitude of perceiving death as a failure. I wish it were this easy.

Most physicians with a terminal illness will not let a doctor near them for anything other than pain control. They know when treatment is futile and when it will, at best, give them several additional months of painful life. Why don't they give their patients the same courtesy?

Physicians have been shell-shocked by our litigious consumer-driven society into abandoning common sense. It is not unusual for physicians to establish a consensus within a family to allow a loved one to die in peace, only to have some "son from California" arrive and demand that everything be done. Physicians thus choose the path of least resistance, preferring to pursue aggressive care rather than later being accused by some lawyer of "allowing Grandpa to die."

When I worked as a volunteer physician in Haiti, I had the luxury of being able to do what I thought was right for patient comfort. Patients with pain never suffered. I would mix morphine in a bottle of normal saline and titrate the dosage until my patient was comfortable. I did not have to worry about being served papers if I hastened death by several hours. Furthermore, my judgment was never questioned. If I thought treatment was futile, my patients accepted the verdict. No useless and painful procedures were imposed on living skeletons afflicted with AIDS and drug-resistant tuberculosis.

To expect physicians ever to command such respect in the United States is impossible in our rights-oriented society; however, it is possible to structure our health-care system so that patients no longer suffer needlessly. National protocols should be established so that insurance companies, Medicare, and Medicaid are not forced to pay for useless treatments. Rather, hospice care for the terminally ill should be encouraged. Doctors should be able to prescribe painkillers, including marijuana, with impunity in terminal patients. Limits on awards in medical malpractice cases should be in place.

Alas, these reforms are unlikely. No wonder Dr. Kevorkian is so popular!

Joseph F. Bentivegna, M.D.

Rocky Hill

The Doctor's Dilemma

As health-care "reform" moves inexorably onward, physicians and hospitals continue to struggle to define their role in the health-care delivery systems of the 1990s.

During the past few years, physicians and hospitals developed several major initiatives aimed at insuring that each group will have a commanding place at the table when health-care policy is either initiated or revised.

Many physicians have endeavored to strengthen their voice in health care by joining physician-controlled groups whose purpose is to provide a vehicle for negotiation with payors; examples include the California based Friendly Hills Healthcare Group and the Mullikan Medical Center organization. In Connecticut, we have witnessed the creation of primary-care groups, as well as subspecialty-oriented medical groups. The goal of these organizations is to offer a managed-care organization the opportunity to work together with a highly competent, cost-effective, responsive cadre of physicians with whom it may contract for the delivery of health care to its members. The hospital is viewed by the physician group as one of several cost centers with whom it must negotiate. There is no require-

ment that the goals of the physician group and the hospital be aligned and, in fact, there is often an atmosphere of distrust between the two.

Hospitals have not been idle either. Physician-hospital organizations (PHOs) exist in many hospitals in the state. In its earliest stage of development, the PHO functioned primarily to serve as the arbiter of the appropriateness of a particular managed-care contract. The PHO structure was useful to both the hospital and the physician members of the PHO, because the interaction at the PHO level increased understanding and helped to align the goals of both parties. The PHO was beneficial for managed-care organizations as well, because its existence eliminated the necessity and cost of contracting with individual physicians. In addition, as PHOs have matured, the ability to share risk has become a feature that has proven to be highly attractive to managed-care organizations.

With these organizational alternatives in place, physicians must now decide where to place their energies and financial support.

I would argue that it is the PHO structure which offers the physician the best chance of achieving a voice in the health-care process. There are several reasons why this is so.

1) The history of physician-controlled organizations in this state is not impressive. One has only to recall the fate of Healthcare (which was sold to Blue Cross), PHS (which encountered significant turmoil with the Bridgeport IPA), and M.D. Health Plan (which was sold to Health Systems International), to recognize that the fact that physicians establish an organization does not guarantee that the organization will remain in physician hands. In fact, Mullikan Medical Centers recently merged with Med Partners Inc. Med Partners is a publicly traded company, and it is too early to see whether this merger will alter Mullikan's basic philosophical principles, but the danger that there will be a loss of physician control is a disturbingly real one.

2) Antitrust regulation is a major impediment to the development of a truly competitive physician-owned organization. Under present regulation, if a physician-owned group attracts a significant number of physician participants, that group may be in violation of antitrust laws. For example, if a vast majority of an area's primary-care providers belong to a specific primary-care provider organization, there is the real threat that a managed-care organization may ask the federal government to investigate whether that primary-care organization is, in effect, restraining trade. In order to avoid such an investigation, the primary-care organization may seek to deliberately limit its membership. However, this serves to create a significant number of "free agents"—unaffiliated physicians, or physicians affiliated with other primary-care provider groups, who may well be willing to provide services to a managed-care organization. The recent action of the federal government against the Danbury IPA is an excellent example of how difficult it is to establish a balance between adequate participation *vs* monopoly status in order to avoid legal action.

3) The capital investment required to establish and maintain a successful physician-owned organization is a significant obstacle to the formation and continued independent existence of the organization. With physician incomes falling, it is hard to envision how sufficient liquid capital will be acquired within the organization. In addition, if one group of physicians contributes more, will this entitle that group to a greater say in governance? Is money collected per physician or per group? The list of questions is extensive; the answers are not easily forthcoming or universally accepted.

I believe that the PHO model is superior to the physician-owned model for the following reasons:

1) The PHO helps to align the goals of the physician and the hospital. Both parties have as their major mission the provision of medical care to the community. Both parties are also cost centers.

A close working relationship enables physicians to cooperate with hospital personnel to establish policies and procedures that can reduce costs on both the inpatient and outpatient side. These efforts enable the patient to receive the highest quality level of cost-efficient care. Active physician participation in quality improvement initiatives has repeatedly been shown to improve hospital performance. Since hospital charges are a major determinant of the cost of care, it is imperative that these costs be reduced in order to reduce health insurance premiums. Partners generally produce better results than adversaries, and a PHO dedicated to reducing costs can be more effective than a hospital or physician group acting independently. The financial reserves needed to run a successful PHO are significant, and require that both physicians and hospitals make substantial monetary contributions. However, medical service organizations (MSOs), often owned by PHOs, can substantially reduce the cost of doing business for physician members. Monies saved by participating in an MSO can be used to fund the PHO. Although many physician-owned organizations provide MSO support, a truly successful MSO needs a large number of members in order to provide the capital funds required for member services. Physicians and hospitals share needs such as surgical and office supplies. Combining the two groups produces a major purchaser, able to exact significant discounts from suppliers. Also of great importance is the need for a sophisticated medical information system (MIS). The price tag for these systems can run into millions of dollars. By sharing computer time and data with the

hospital, it is possible to produce significant savings, thereby reducing the financial burden placed on the participating entities.

2) A true partnership between a hospital and its physicians creates a structure that is often very attractive to a managed-care organization because managed- care organizations recognize the value of a coordinated approach to health-care delivery.

3) Finally, the formation of a PHO allows that organization to assume all risk should it desire to do so in certain situations. The PHO can act quickly and decisively, without the fear that either the physicians or the hospital will behave in a manner that is antagonistic to the other. In an era when success in business requires rapid reaction, the PHO provides an invaluable tool for prompt decision making.

I believe that the vast majority of physicians realize that the delivery of health care has changed irrevocably. The doctor's dilemma is the decision as to which new path to follow.

Frederick L. Sachs, M.D.

President
Yale-New Haven Hospital PHO

"Managed" Care: A Surgeon's Testimony

The Legislation Session was beginning. I appeared in Stamford before a panel of legislators headed by Representative McDonald in November 1995. I did present a patient, Angela S., who told her story. I will briefly summarize it:

This patient, a woman over 60 years old, has been my patient for more than 25 years for many orthopedic problems. I am basically her "primary care musculoskeletal orthopedist." She called me in October. She was very upset. She had some pain down her arm, and had gone to a neurosurgeon. She was referred to an orthopedic surgeon who told her he was going to take bone out of her hip and put it into her neck.

She was told that she did not need a second opinion, because the MRI was positive for a herniated disc. She was not told that in patients with no symptoms whatsoever, over the age of 60, herniated discs can be found on MRIs in 21% of people. They don't even know they have this herniated disc and have had no neck or arm symptoms whatsoever.

Briefly, I am not and could not be on her HMO panel of physicians which was quite limited. She came to me out of network for a second opinion. I listened to her. I examined her. I know her. I injected the bursitis of her shoulder. And, within 10 days, she was nonsymptomatic.

Her story has a happy ending. I am not a hero. I just knew my patient. But, I could not get to her because of the lack of an any-qualified-provider provision. However, her history is not an isolated one. And some other people have not been so fortunate. I have been in practice for 33 years. I have seen more than 15,000 people. I believe in listening to and hearing my patients. I am not a political activist. I am not a lobbyer. I have been to Hartford once. I have been to a few medical/political meetings to meet my legislators. I now can suffer the luxury of integrity because of age and past experience.

I belong to at least eight or 10 HMOs. I am one of the original physicians in PHS and M.D. Health Plan. I think I have an excellent record, and, hopefully, a reputation as a concerned physician for the quality of care for my family of patients. However, in Angela's case, and in others concerning the joining of HMOs in order to obtain accessibility to my patients, I have been somewhat remiss and have lacked business acumen. I was late in applying to this HMO and others. This has made me a victim of a closed panel, which I think is very unfortunate. There is very little doubt that the "Any qualified-physician provision" that was rejected by the state legislature would result in better quality care for patients. I also feel that the legislators at the hearing of November 30th also received the message that patients want physicians that they know, that they trust, and with whom they have been acquainted with for many years, and in many cases are willing to pay somewhat extra for that privilege.

I have canvassed my patients and staff about the problems of managed health care. I would like to know the following. What protections for the general public, including senior citizens, Medicaid patients and others is the legislature going to enact? Is there going to be a Bill of Rights for patients and doctors? Is there going to be any protection for the patient who, unfortunately, is now a "consumer," from practices which now seem to be concerned with the bottom dollar and not concerned with quality care, and certainly not concerned with the patient-doctor relationship? Will there be any protection for any citizen who sees the name of his physician on a panel, signs up, and within a short period of time is told that his doctor has been dropped from the panel with no explanation or reason given, and no explanation needed to be given? Will doctors who want to play by the rules be prevented accessibility to their patients? Will there be truth in advertising? Will the insurance companies be forced to explain that the HMO may be a full-risk capitation system that encourages patients to skimp on treatment and attention; that physicians may well have financial incentives to drag their feet, to try to handle more than they are trained to do, to discourage referring patients to specialists because they cost the physician money? Do people

understand what is Full Risk; No Risk? Do they know that, if the cost of caring for a member exceeds the monthly per capita amount because the patient needs extra tests or consultation with a specialist, the doctor must "eat the loss"? It is indeed not a system to aid doctors to do what they think is right. Do they know that when it says 100% covered, there is a little asterisk at the bottom of the page and says "of those things covered"? Will companies be forced to tell you what percentage of each dollar goes for health care and what percentage goes for administrative costs?

In the *New York Times* the president of a leading HMO said "Like many people, I am dismayed at the way some managed health care organizations work. At times managed health care is a euphemism for cost cutting that puts the patient second. Because of the industry's financial success, too few organizations are paying attention to rising worries about how they will fare with HMOs. They restrict access to doctors and patients. The industry needs to provide information that enables people to compare plans and choose intelligently. That is not being done at the present time."

I implore the legislators to introduce safeguards. There should be some intelligible, first disclosure literature. Health plans must make clear the guidelines they want doctors to follow when treating patients. They should disclose the treatments that are not covered. The plan should fully disclose their payments to physicians, including bonuses relating to cost containment and quality of care. Patients should be aware of which drugs managed care plans allow doctors to prescribe and which ones they do not. They should certainly know about the appeal processes or lack thereof. In a poll of my employees who work with HMOs their concerns are virtually universal. Lack of communication, voice mail instead of people, late payments, nonconcise, nonconsistent payments. Difficulty in getting permission for tests which are legitimate. Each HMO has different guidelines. Each HMO has multiple policies and fee schedules. The don't even follow the same coding. They make mistakes, 90% of which are in favor of the company. There are very few that are in favor of the patient or the doctor. Employees of HMOs are not trained well enough. Employer/employee HMO turnover is tremendous.

Lastly, what do you plan to do to help people who have been denied what they feel are legitimate claims and whose plans seem incomprehensible? Will this be under the Commissioner of Insurance of the State of Connecticut? Will there be satellite offices where people can come, present their case, and within one telephone call get answers, somewhat similar to Small Claims Court? Will that person who makes the telephone call be empowered to make decisions by binding upon managed health care and patient alike? New York State has investigated 23 HMOs recently, none of whom have complied with regulations which were very simple. Who is going to protect the citizens, so that low cost, quality health care does not result in the greatest oxymoron of 1996? If there is going to be a panel to put forth such legislation and to regulate it, I am sure you could get many volunteers. I, myself, would be happy to volunteer for anything that the legislators feel would be helpful. The lieutenant governor of the State of New York and the governor have tried to get a patient's Bill of Rights through their legislature, but have been vehemently opposed by managed health care. I hope this will not be the case in Connecticut.

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Presented 30 November 1995 to a judicial committee hearing in Stamford.

Guest Editorial

Legislation in Connecticut Seeks to Prevent Adolescent Deaths: Now and in the Future

Adolescence is the time for completion of children's psychosocial and physical growth prior to entry into adulthood. It is a period of experimentation and rebellion during which teens master adult tasks and make difficult life choices. Unfortunately, it is also the time of life that youth confront the two leading causes of premature death in the United States today.[1]

Tobacco-related disease, the leading cause of premature death in the U.S., is a disease of children since 89% of all smokers are addicted to tobacco before their 18th birthday. The average American tobacco user starts his or her habit at 14 years of age. Each day, 3,000 children become addicted to tobacco, almost one in three of these children will eventually die from their addiction.[2] There are several reasons why teens start smoking. Many are children of smoking parents. Parents lighting up 10 to 20 times a day deliver a far more powerful message than a physician or health teacher counseling against smoking several times a year. Peer approval is also important to children, who, when polled, consistently overestimate the percentage of their peers who smoke, due in part to the tobacco industry's consistent and effective marketing of its products to children.[3] In spite of claims to the contrary, many tobacco advertisements target children, as typified by the R.J. Reynolds Tobacco Company's Old Joe Camel campaign. This ad campaign has given Camel cigarettes a product recognition among three to six year olds that approaches that of the Disney Channel.[4] Not surprisingly, Camel cigarette sales to adolescents increased 64% between 1989 and 1993.[5]

Preventing children's tobacco addiction requires addressing the appeal of tobacco to children as well as their access to tobacco products. A coalition, led by Connecticut Attorney General Richard Blumenthal and including the Connecticut Academies of Pediatrics and Family Practice, the American Cancer Society, the American Lung Association, and the American Heart Association, has proposed legislation now pending in the Connecticut legislature to protect our children from tobacco products. The legislation includes banning free cigarettes, sale of cigarettes in packs of less than 20 (kiddie packs), and sale of cigarettes in vending machines in sites other than bars. The proposed legislation will also strengthen the Department of Mental Health and Addiction Services' ability to enforce Connecticut's law banning tobacco sales to minors and increase the tax on cigarettes to support anti-tobacco educational efforts that will target children.

A second proposal before the legislature seeks to protect Connecticut teens from deaths and injuries as motor vehicle occupants, the second leading cause of premature deaths in the U.S., and the leading cause among Connecticut's older adolescents.[1,6] According to research conducted by the Connecticut Childhood Injury Prevention Center, one in nine licensed 16-year-old Connecticut drivers in 1993 was in a serious motor vehicle collision in which he or she was at fault. Among 17-year-old drivers, this rate declined only slightly to one in 13 licensed drivers.[7] Serious collisions, as defined by the Connecticut Department of Transportation, are those where there is either loss of life, serious injury, or, if on state highways, significant property damage. Further research to determine the circumstances of these collisions found that adolescent drivers tended to carry more passengers, have higher fatality and severe injury rates, and were involved in more single-vehicle collisions, especially at night, than older drivers.

To decrease the deaths and injuries caused by teen drivers in Connecticut, the Connecticut Coalition for Safe Teen Drivers, led by the Connecticut Chapter of the American Academy of Pediatrics and the Connecticut Childhood Injury Prevention Center, is proposing gradual licensing of new drivers. Currently under Connecticut law, a person 16 years of age or over may operate a motor vehicle on public roadways without having passed a written knowledge test or a vision test, as long as he or she has a licensed driver with four years experience in the vehicle. As eerie as this may seem, a person who has impaired peripheral vision or is unaware of the meaning of a solid *vs* broken line may legally be behind the wheel learning to drive as long as there is an adult driver in the car. The graduated licensure proposal will require a learner pass a vision and knowledge test before receiving a learner's permit. For six months after passing their road test, new drivers may only drive alone during daylight hours. After dark, they may drive only if accompanied by a driver who has been licensed for more than four years unless driving to or from school or work-related activities. During this period, they must require that their passengers be properly restrained and, except for family members, be limited to one passenger. If new drivers remain without any at-fault moving violations during these six months, they will receive a regular driver's license with full privileges.

If passed, this legislation will make Connecticut's new driver's law similar to those of neighboring states. This proposal had already received endorsements from Moth-

ers Against Drunk Driving, the American Automobile Association, the International Association of Chiefs of Police, and the National Highway Traffic Safety Administration, among other groups.

We urge all health professionals to contact their state elected representatives to recommend their voting in favor of these proposals. In the words of President Jefferson, "The care of human life and happiness, and not their destruction, is the first and only object of good government." Let us take the first steps to ensure that Connecticut's next generation will be its first smoke-free and its safest generation.

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50 Years Ago

From *The Connecticut State Medical Journal*

April 1946

Valvular Heart Disease (Rheumatic) in Rejectees

Survey of 100,000 Cardiac Examinations Performed at The New Haven Recruiting and Induction Station, New Haven, Connecticut

CHARLES C. VERSTANDIG
Major, Medical Corps, New Haven

HEART disease plays an important role in the health problems of our nation. Heart disease is responsible for an appreciable per cent of rejections from the armed forces.

Paul White[10] has remarked that diseases of the heart is a world problem. He has stressed the need for a large and well organized study. Such a study should entail a several year program gathered from an entire community, not just from a hospital, clinic or private practice which would show how common are hypertension and rheumatic heart disease in relation to climate and mode of life.

The fundamental cause of rheumatic heart disease is unknown and the incidence of the disease throughout the world is far from explored adequately. There are several things about the disease that are clear today. To begin with, it has been found that the disease is most common among the people of meagre means. Paul and Leddy[9] have supported this finding in their survey and observations. We next find that there is a fairly high incidence in certain families. Thirdly, in its severe form, it is more common in temperate than in tropical climate. Fourthly, that hemolytic throat infections are more prone to result in an acute rheumatic infection. It has been shown that in New England, at least a third of all cardiac patients are rheumatic in type.

Reprinted from the *Connecticut State Medical Journal*, April 1946.

The purpose of this survey was to study the distribution of rheumatic heart disease in the State of Connecticut.

This study is based upon the cardiac examinations of 100,000 consecutive Selective Service registrants whose ages range from 18 to 38 inclusive. This group represents a true perspective of the male population of corresponding ages in the entire State of Connecticut. In this group are included the urban as well as rural male, the professional man, the farmer, the skilled as well as unskilled and the white as well as the colored and Oriental.

Statistics of World War I, as far as man days lost were concerned from valvular heart diseases were 487,977. One can gather from such figures that a correct evaluation of cardiac disease and/or abnormalities in the inductee or registrants is of utmost importance.

The diagnosis of heart disease at the New Haven Station is always confirmed by two or more clinicians. To arrive at a diagnosis we must include the history, utilize the photoroentgenogram, teleoroentgenogram and the electrocardiogram when indicated. At this station, a systolic murmur, loud in intensity, increased by effort is considered significant. The diastolic murmur heard at the apex or base is considered to be organic and is rejectable. The same disposition is made of the presystolic crescendo murmur which is terminated in a snapping first sound especially when its intensity is increased after exercise.

In a survey of 130 cases, studied by Chamberlain,[2] referred from recruitment medical boards, it was found that a systolic murmur heard at the apex cannot in itself be

accepted as evidence of organic heart disease, but when present a high grade of exercise tolerance should be required and care taken to exclude enlargement and aortic or mitral disease. The history of acute rheumatic fever may help in making a diagnosis. Only when a registrant has a good exercise tolerance should he be accepted if he reveals a systolic bruit as the only abnormal sign.

Wilburne,[11] in his survey of 20,000 selectees examined in the Pacific Northwest, found that rheumatic heart disease was the most common heart disease encountered. Rheumatic heart disease occurred in 183 examinees, or 63.5 per cent of the total rejections for heart disease. Fenn,[3] in a detailed *re-examination* of 1,009 selectees, who were rejected for cardiovascular disease at the Boston Armed Forces Induction Station revealed that the most common confirmed cause for rejection was rheumatic heart disease and 56.8 per cent of the group were designated as 4F for rheumatic heart disease The estimated incidence of rheumatic heart disease among young adults (21 to 30) in the United States Draft 1918[5] was 15.7 per 1,000.

Paul and Leddy[9] observed that the incidence of rheumatic heart disease among Yale University undergraduate students (ages 14 to 27) proved to be 8.2 per 1,000. This they had assumed to be below the average rate for the general population in the northeastern part of the United States, i.e., 15 per 1,000.

Cole[2] in his survey of 28,139 newly entering students, at the University of Wisconsin, over a period July 1931 to July 1939, found the incidence of heart disease to be 10.2 per 1,000. In his study he found that the mitral valve was involved in 85 per cent of the cases and that the average age of the student with a diseased heart fell between the ages of 19 and 20.

This survey does not include registrants rejected for a history of rheumatic fever alone. Such registrants are rejected by reason of "a history of acute rheumatic fever, or verified history of single or recurrent attacks of rheumatic fever within the previous two years."[7]

The idea or immediate purpose is to compare the incidence of rheumatic heart disease throughout the State of Connecticut.

In the preparation of this study, this survey was made up of consecutive numbers of complete examinations. From these examinations were selected those cases with recorded cardiac lesions or abnormalities of cardiac function of any kind, exclusive of the so-called functional cardiac murmurs. All cases of mitral stenosis were accepted as examples of rheumatic heart disease and all cases of endocarditis and of mitral and aortic insufficiency in which the registrant gave a history of rheumatic fever were also accepted as valvular disease.

TABLE I

INCIDENCE OF VALVULAR HEART DISEASE PER POPULATION

COUNTY	NUMBER OF CASES (WHITE)	(COLORED)	POPULATION IN 1943
Fairfield County	270	7	434,265
Hartford County	168	5	474,286
Litchfield County	15	0	87,662
Middlesex County	18	0	58,635
New Haven County	220	7	477,763
New London County	25	0	129,384
Tolland County	11	0	32,327
Windham County	10	0	54,080

There have been few observations made in regard to the incidence of rheumatic heart disease in various populations in the United States with which any results can be prepared.

It was found that in this State the largest incidence of rheumatic heart disease occurred in the coastal counties (see Table 1) of the State, e.g. Fairfield, New Haven and New London counties. The next largest number of cases occurred in a North Centrally located county—Hartford County. The incidence of rheumatic heart disease in Fairfield County, whose population in 1943 was 434,265, revealed 277 cases (white, 270, colored, 7 cases). In New Haven County, the population of which was 477,763 in 1943, there were 227 cases (white 220, colored 7, cases). In Hartford County the population of which was 474,286 in 1943, there were 173 cases of rheumatic heart disease (white 168 and colored 5).

There were a total of 756 cases of valvular heart disease found in the 100,000 consecutive cardiac examinations.

As a result of this survey the Author has concluded that the incidence of rheumatic heart disease in the State of Connecticut is 7.56 per 1,000 (for the ages 18 to 38). This incidence closely parallels the incidence observed by Paul and Leddy[9] as well as the observations made by Wilburne and Ceccolini.[11] The highest incidence of rheumatic heart disease occurred in the coastal counties of Connecticut.

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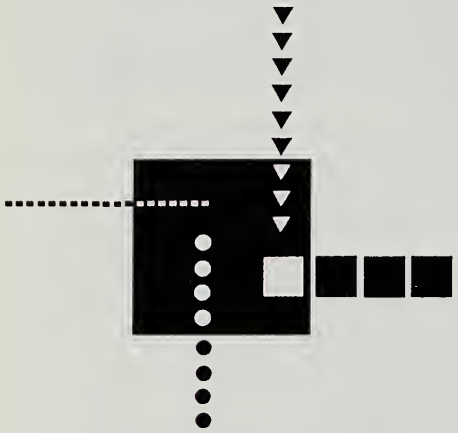
Organized Medical Staff Section



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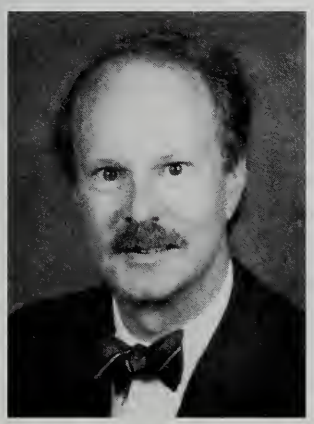
Visit to Suriname



Under the auspices of The Albert Schweitzer Institute for the Humanities, I recently traveled to Suriname. The goal of the trip was to plan for the development of a Cancer Center in the capital city of Paramaribo.

Suriname is located on the north-central coast of South America. It was formally known as Dutch Guiana and was a Dutch colony until gaining independence in 1975. The population is approximately 420,000 and is ethnically diverse, including Creoles, Javanese, Hindustani, Chinese, Amerindians, and bush Negroes. The majority live in Paramaribo, near the coast, while the Amerindians and bush Negroes live primarily in the rain forest interior. Suriname is a major producer and exporter of bauxite, rice, sugar, and fish. Most finished products are imported from Europe and the United States.

Until independence, Suriname was one of the most advanced countries in the region. Public works were well developed, including hydroelectric power, potable water supplies, and adequate sewage. Its medical care was also first rate, and its "Academic Hospital" was the referral center for all the Caribbean.

But like most former colonies, the early years of independence were difficult. The fledgling government was taken over by the military. Summary executions of political dissidents and other human rights abuses followed. Foreign aid, particularly from Holland, and loans from the World Bank were terminated. Multinational companies withdrew their capital, decimating the economy and creating large scale unemployment.

A guerrilla movement briefly returned civilian rule, but a second coup soon followed. All cash reserves were squandered, so the military simply printed more money. Inflation surged to triple digits. Finally, in 1991 democracy was again restored, and today a sense of order and security now prevails.

With foreign capital and World Bank support returning, Suriname is starting to rebuild an infrastructure essentially unmaintained for thirty years. My charge was to assess the current medical facilities, particularly for oncology, and develop strategies for modernization. I visited the country's three major hospitals, its medical school, several public health organizations, and met with leaders of both the medical and business communities.

The hospitals are in serious disrepair, cosmetically dreadful and structurally suspect. Large, open wards with poor lighting, no air-conditioning, and no privacy are the norm. Equipment is sparse and decrepit. Cardiac monitors are vintage 1960s. Pharmaceuticals, laboratory, and x-ray are all limited. Antibiotics, for example, are chosen not by sensitivity, but by availability. Supplies are donated from abroad only when outdated. The only new technology is a second generation CAT scanner just installed. The pictures are acceptable, but the waiting list too long for it to be of much clinical utility.

There is a University Medical School, over 120 years old and once the finest in the Caribbean. Primary care programs are still adequate, but specialty training must be obtained abroad, usually in Holland. Unfortunately, on completing their fellowships, most specialists do not return to Suriname because of the poor medical facilities.

For example, there is not one oncologist in the entire country. Some internists do give modest doses of chemotherapy, but any significant oncologic care, including radiation, requires a trip to Holland. The ministry of health has a "system" to address this problem. Government funds allow about 30 patients a year to be treated in the Netherlands. This number is woefully inadequate. Given the high rates of cervical carcinoma, I estimate an annual cancer incidence of approximately 1,850 cases. And even those lucky enough to be treated abroad have no further oncologic care when they return home.

(continued on next page)

Despite these problems, Suriname's future is bright. First, it has public works that, although in need of maintenance and updating, distinguish it from developing countries which have none at all. More importantly, it has an educated population whose literacy rate exceeds that of even the United States. With political stabilization and democratic rule, foreign capitol will find profitable markets.

Investments in medical facilities will be particularly rewarding. A substantial number of the expatriate physicians living in Europe wish to return to Suriname. If the hospitals and clinics can be sufficiently modernized, this reserve of specialists could establish a first-rate health-care system within a decade. The possibilities are real and very exciting.

Throughout my visit, I could not help but compare the life of a Suriname physician with my own. He provides basic, primary care to treat whatever his training and medical facilities will allow. He knows that those requiring more care will not receive it, and he feels powerless, at least on an individual basis, to change this.

My problem is more difficult. I have a surfeit of resources, technology galore. As I toured the rundown facilities of Suriname, I was grateful to be practicing in the United States, where medical care has no equal. But even here care is limited, not by lack of technology, but of money. Whether inequities stem from poverty, uninsurance, or managed care, the wizard behind the screen is the almighty dollar.

Just how the richest country in the world can restrict medical care for lack of money is a riddle for which I have yet to hear a solution. Suffice it to say, while my Suriname counterpart is dissatisfied by technological limitations to health care, I am frustrated by financial ones. Patients of us both suffer the consequences.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors.** This is published in most issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:
Robert U. Massey, M.D., *Connecticut Medicine*
160 St. Ronan Street. New Haven, CT 06511

Deconstructing the Hippocratic Oath

ROBERT U. MASSEY, M.D.

THE fourth paragraph in the Hippocratic Oath includes in its brief 45 words two prohibitions that seem destined to divide both physicians and the American people into two hostile camps between which compromise is impossible.

> I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to this effect. Similarly I will not give to a woman an abortive remedy. In purity and holiness I will guard my life and my art.

It is no good arguing over the meaning of the first sentence: some have suggested that it implied that a physician should not give a poison to someone who intended to use it to commit murder. That may have been one meaning, but it hardly precludes an interpretation prohibiting aiding a suicide.

The "abortive remedy" may be more problematic. The Greek, *pesson phthoron,* raises the question of what the words, especially *pesson,* meant at the time they were written: sixth century B.C., fourth of fifth century B.C., or later? My lexicon gives *pessein* as meaning to soften, cook, digest, or heal. It seems to be the same as *peptein*, from which we get variations on peptic, peptide, etc. *Phthoron* means destruction, ruin, a bad thing; in its feminine form, *phthora*, it means death, depravity, or seduction of a woman. Therefore, destructive or deadly remedy? In the Oath the usual translation is defensible enough. The last sentence seems a restatement of the first two, suggesting that both acts offend against purity or holiness.

Present-day versions of the Oath, especially since 1972, substitute sentences like these:

> I will maintain the utmost respect for human life even under threat. I will not use my medical knowledge contrary to the laws of humanity.

Respect is not easy to define; regard, esteem, honor, concern—easy enough to understand what the drafter of these lines had in mind, but Dr. Kevorkian would claim to respect his patients and even their lives. But "the laws of humanity," where are these to be found? Where did the physicians in the Third Reich find them who cooperated so eagerly with their Nazi masters? These contentless sentences were crafted so as to be inclusive, to accommodate many interpretations, to offend no one, to be read gravely at commencement ceremonies.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

Sentiment is building to permit assisted suicide; in various polls at least half, perhaps more, of both physicians and the general public would support legalization. Over 25 years ago when the clinical research meetings were still held in Atlantic City I recall a plea by a prominent academic physician for support for his effort to make assisted suicide or euthanasia (I do not remember which) acceptible practice.

> Then said Saul unto his armour bearer, Draw thy sword and thrust me through therewith;... But his armour bearer would not; for he was sore afraid. Therefore Saul took a sword and fell upon it. I Samuel 28, 4.

But in II Samuel 1, 6-17, we learn that Saul, having bungled his suicide, persuaded another young man, an Amalikite, to stand upon him and slay him with his spear. When the young man confessed that he had assisted Saul's suicide, David ordered him slain, saying, "Thy blood be upon thy head: for thy mouth hath testified against thee, saying, I have slain the Lord's anointed."

For those of our profession who, one way or another, accept the Judeo-Christian tradition as definitive, or identify it with natural law, the euthanasia and assisted suicide questions were settled three millenia ago. But medical ethicists Leon Kass and Hans Jonas see the matter in "the very idea of the physician as healer" (Kass). In Jonas's words, "... it is prohibited by the innermost meaning of the medical vocation, which should never cast the physician in the role of a dispenser of death, even at the subject's request." And Kant found, "from self love to shorten life if ... it threatened more evil than it promises pleasantness," not moral by application of his catagorical imperative.

There is an old tale about a bishop who, seeing two angry women disputing loudly across a narrow alleyway separating their houses, remarks to himself, "They'll never settle their dispute; they're arguing from different premises." Perhaps with our two irresolvables we should call a truce, and, to avoid offense, seek legislation to deny payment from public monies for abortions, assisted suicides, and euthanasia, somewhat analogous to denying payment for nosejobs and liposuction.

On the other hand, why be concerned? In another generation, most, except the very old, will have been steeped in ethical relativism, values clarification, and postmodernism in which all virtues, except radical tolerance, will have been swept unto the rubbish heap of history.

This Month's Reading in Review

TIMOTHY B. NORBECK

"Why don't the HMOs take their cue from industry and replace those annoying doctors with robots? Then their non-medical bureaucrats can make the diagnosis and decide on the treatment. And the HMOs could get on with their primary purpose—making money."

A letter written from a patient in Richmond, Virginia, *Time* (12 February 1996)

"If an American is hit on the head by a ball at the ballpark, he sues. If a Japanese person is hit on the head he says, 'It's my honor. It's my fault. I shouldn't have been standing there!'"

Japanese Bar Association official Koji Yamase, explaining why there are half as many lawyers in his country as in the Greater Washington area alone.

Newsweek (26 February 1996)

Look for two interesting tort initiatives on the California ballot on March 26: Proposition 202 would limit lawyers' contingency fees—an early settlement (within 60 days) will allow only 15%; Proposition 200 would eliminate litigation from auto accidents unless one of the drivers is drunk or committing a felony—injured motorists would collect from their own insurance company.... This will be a real test of lawyer strength in California, and the tort reformers expect their adversaries to spend $12 million in the effort to defeat the measures.

Wall Street Journal (21 February 1996)

In today's Congress, 170 of the 435 House members and 54 of the 100 Senators are attorneys.

Parade (25 February 1996)

Dumb and Dumber—Police in Fort Worth, Texas, arrested a man in December just after he had robbed a National Bank branch.... Officers were waiting because a bank customer had walked next door to police headquarters to summon them after becoming suspicious that the man ahead of him in the bank line was wearing a ski mask.

Washington City Paper (2 February 1996)

"I've seen CEOs of insurance companies up here—I've been up here 12 years, and I've never seen 'em before—and most of them have got smiles on their faces. And it scares me."

Kentucky House Speaker Pro Tem Larry Clark, commenting on how a House bill would benefit insurers.

Louisville Courier-Journal (2 March 1996)

The CEOs of 12 publicly owned managed care companies made 62% more in base salary and bonuses in 1994 than CEOs of other businesses with "similar revenues," according to an analysis conducted by the CRYSTAL REPORT newsletter.... Healthsource, Inc.'s Dr. Norman Payson led the pack at $14.28 million.

American Medical News (5 February 1996)

A 23-year-old man who attempted suicide by jumping off the San Francisco-Oakland Bay Bridge actually landed just a few yards away from a psychiatrist out in his rowboat.... The physician used his counseling skills to talk the man into putting on a life jacket and then called 911 on his cellular phone.... The jumper broke bones in his back and punctured a lung in the 220-foot-fall, but survived.... His family said that he regretted trying to kill himself and was "eternally grateful" to the physician and others who saved his life.

Oakland Tribune (29 December 1995)

Only in America: In September, 1993, the Occupational Safety and Health Administration (OSHA) in Washington, DC, announced that it had issued 60 citations and $90,000 in fines for unsafe workplace conditions at the Federal Building in Kansas City.... Incidentally, that federal building is the regional OSHA office.

Washington Post (21 January 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

More Accounts from "Dogpatch" and Such Other Places (*Conn Med*, December 1995 and January 1996)

To the Editor: I am writing to tell you how much I appreciated Dr. Fleeson's article on "'Dogpatch' and Such Other Places," (*Conn Med* 1995; 59:731-5 and 1996; 60:35-40).

Los Alamos was quite a story unto itself. It was called "The town that never was." Anyone assigned there could only be reached by a P.O. Box in Santa Fe. It was a town with no crime, no elderly, etc. Families assigned there found that they had their own schools, stores, theaters, and other services—but no contact with the outside world. (Some special plans were in place to allow for emergency trips into the "outside world.") I have been there twice since the war and it was most interesting. I was not stationed there, but will relate my anecdote relating to the secrecy maintained in Los Alamos.

The war in Europe ended in May 1945. I was a bombardier-navigator, and many of us in B-17s were transferred to the "super-fortress" B-29 from our B-17 fortresses. (There were no more aviator cadets because of lack of personnel to put into such programs.)

I was sent to Kirtland's Air Force Base in Albuquerque, New Mexico. (We were told that the bright flash seen in the sky to the south near Alamagordo was a munitions dump explosion—not the Trinity Site atomic test.)

In preparation for transfer to Saipan, we flew many training missions—so called "radar bomb bay attacks." To certify as to the accuracy of bomb drops, an aerial camera (U2) took stereoscopic pictures at the time of theoretical impact. These could be analyzed later for the accuracy of such a drop. Because the camera shutters might "freeze up" after take off, we often shot a few pictures on our way to our "practice targets." One of our planes, noting a large *uncharted* industrial complex in the mountains north of Albuquerque, took practice pictures of this mysterious place. Upon return to our base, I heard that security personnel were all over this plane—especially to get the films from the U2 camera—since Los Alamos "did not exist."

In any case, it was a well-kept secret even from those of us stationed nearby. We were just puzzled by the fact that our aeronautical charts did not show much of anything at Los Alamos in the Jemez Mountains north of Albuquerque.

Stewart J. Petrie, M.D.

Branford

To the Editor: The article, "'Dogpatch' and Such Other Places," which appeared in *Connecticut Medicine* in December and January, written by William Fleeson, M.D., inspired me to send you the enclosed summary of my husband's "military" experience in the Manhattan Project.

My husband was Hugh L. Dwyer, M.D. He graduated from Northwestern Univeristy Medical School in March 1943, interned at New Haven Hospital (as it was then called) 1943-44; became assistant resident at University of Iowa Hospital from March to December 1944, whence he entered the army.

After the war, he completed his residency in internal medicine at Yale, joined the medical school full-time faculty for three years, and then entered into private practice of internal medicine in New Haven, retiring in 1983. He died in 1987. He was a member of the Connecticut State Medical Society.

I wrote the summary of his army experiences, mostly from memory, after he died. (We were married in 1947, after his return to New Haven, so I was unaware of his experience in the army until after its completion.)

I thought Hugh's experiences might be of some interest to you, since they are so different from those of Dr. Fleeson. I am a retired radiologist.

Dorothea R. Peck, M.D.
(Mrs. Hugh L. Dwyer)

Hamden

Service in Manhattan Project—1945-46 Hugh L. Dwyer, M.D.

In January 1945, Hugh entered active military service at Carlisle Barracks, Pa., where he joined the Medical Officer Training Program. (He came from the University of Iowa Medical School Hospital, where he had been assistant resident in medicine.)

At the end of the six-week training period, he received (as did the other medical officers-in-training) sealed orders as to where he should next report. His orders were for Oak Ridge, Tenn. No one knew anything about Oak Ridge except one man, who commented: "Brother, you've kissed the world good bye." Hugh had an uncle in Washington, D.C., whom he visited before leaving Carlisle. The uncle

was an engineer who had several connections with the federal government. He assured Hugh that he would be able to find out about Oak Ridge. Soon thereafter, the uncle was visited by the O.S.S. demanding to know why he was inquiring about Oak Ridge. He was told to keep quiet about it and to ask no more questions or he would be put in jail.

Hugh took the train, as ordered, arrived at Oak Ridge, and was assigned to his quarters. His work was the medical care of civilians. None of his patients knew what was going on at Oak Ridge. They were merely office workers, construction workers, etc. He had the good fortune to have a colleague from the Mayo Clinic working alongside him. John De Persio was a little older than Hugh, was an excellent and experienced clinician, and taught Hugh a great deal.

Several months later, Hugh was transferred. He took a train to Albuquerque, New Mexico. He did not know what he was supposed to do when he got off the train. Soon a WAAC officer came up to him, checked his papers, and then drove him a long way into the desert. She took him to Los Alamos. (I don't know when he learned the name of the place.) He came to realize that many of the civilians he was seeing as patients were physicists, and some of them were among the most prominent in the world. He even had Robert Oppenheimer as a patient when Oppenheimer had chicken pox! Shortly after his arrival at Los Alamos, the scientists decided the army docs could be trusted with their secrets, and he learned they were developing the atomic bomb!

The first test bomb, known as Trinity, was detonated in the desert at Alamogordo, N.M., 16 July 1945. Hugh could have gone to watch the test, but he was too skeptical and cautious, so he preferred to learn about it afterwards.

After the bombing of Hiroshima and Nagasaki and the end of the war, (I am under the impression that Hugh knew nothing about those bombings until after they occurred) Hugh was transferred to Washington, D.C. I think he was working for General Groves, but am not sure, nor do I know what he was doing. He could have gone to Bikini for the atom bomb tests there, but again he had no desire to be near an atomic explosion.

His final army assignment was to Hanford, Washington, where he was again doing clinical medicine. He was concerned about the radioactive wastes there, and stayed as far away from the reactors and the Columbia River as possible.

He was discharged from the army early in December 1946 with the rank of captain. He got rid of his army clothing and equipment as quickly as he could. He returned to New Haven the end of December 1946, as assistant resident in medicine, under the chairmanship of Dr. Francis G. Blake.

Testimony of the Connecticut State Medical Society to the Public Health Committee regarding HB 5657, An Act Concerning Managed Care presented by Dickerman Hollister, Jr., M.D. 5 March 1996

GOOD morning Senator Gunther, Representative MacDonald, members of the Committee; my name is Dickerman Hollister, Jr., a physician from Greenwich and President of the Connecticut State Medical Society, here today to speak on behalf of the Society in support of HB 5657, An Act Concerning Managed Care.

As you may know, the Connecticut State Medical Society has been supporting a proposal that we have called the Patient Protection Act and we are very pleased to see that the Committee's Act Concerning Managed Care is consistent with many of the provisions contained in that Patient Protection Act. This Managed Care Act, like the Patient Protection Act, would compel managed-care entities to disclose operational and organizational information to enrollees and to the Department of Public Health. The disclosure requirements are intended to enable patients and providers to make more informed decisions about participating in a managed-care plan. The publication of information is also expected to have a self-policing effect on managed-care entities.

While the Patient Protection Act was designed primarily as a disclosure statute, HB 5657 contains even stronger protections that we physicians wholeheartedly support. While I am here to testify in support of this legislation, it has fallen on me to speak to one set of protections that are not included in it, and those are the protections for providers. Protections to ensure fairness in credentialling, provider selection, and termination procedures, protections to ensure that providers are not discriminated against based on the make-up of the patient population that they treat, such as patients with costly, long-term chronic medical conditions, and most importantly, protection of the physician's role as patient advocate, need to be included in this legislation.

The fundamental cornerstone of medicine is the patient-physician relationship. In our current managed-care environment the patient must rely on this relationship and trust his or her physician to provide full information regarding diagnosis and treatment options and services. The patient must also rely on the physician to obtain the necessary preauthorizations, to appeal adverse decisions, and to represent the patient's best interest with the managed-care bureaucracy. In fact, the patient trusts the physician to be his advocate and that is the basis of American medicine. This is what distinguishes us from any other country in the world.

I must tell you that this role of patient advocate is being threatened because we physicians fear retaliation by the managed-care companies. We fear that too many appeals, too many calls to the medical director, too many diagnostic tests orders, may cause the company to seek disciplinary action or even deselection, which means losing the ability to treat these patients altogether.

I am here today to ask for your support of these fairness provisions because this role as advocate is the best way for us to protect our patients from the profit-oriented managed-care industry. It is fundamentally in the interest of all patients, including us doctors who are patients also, to allow physicians to practice in the best interest of the patients and to remain their advocates, especially during the stress of a serious illness or hospitalization. We believe that it is our professional responsibility, and we hope that you will support us in continuing to utilize our professional judgment when treating patients. We must not let patients be misguided or misled by managed-care plans.

Testimony of the Connecticut State Medical Society to the Public Health Committee regarding HB 5657, An Act Concerning Managed Care presented by Bruce Browner, M.D. 5 March 1996

SENATOR Gunther, Representative MacDonald, members of the Committee, my name is Bruce Browner, a surgeon practicing in Hartford, and I am here today to speak on behalf of the Connecticut State Medical Society in favor of HB 5657, An Act Concerning Managed Care, and specifically to address the role of the Department of Public Health.

HB 5657 proposes a new philosophy in the regulation of managed-care plans by delegating an entire segment of regulatory authority and oversight to the Department of Public Health. There is division of responsibility that is created by this bill which separates those oversight functions related to the quality and delivery of patient care from the regulation of insurance, and places those functions under the auspices of the Department of Public Health. The Connecticut State Medical Society agrees with this philosophical division and believes that issues of medical quality and patient care are issues of public health and safety.

While granting the Department of Public Health a new role in issuing and regulating Certificates of Authority to managed-care plans, it also transfers to it the responsibility for licensure of utilization review companies from the Department of Insurance. We support this transfer of responsibility. The current licensure statute for utilization review companies is a good one, one that the medical community had input into originally. However, the specifics of the statute currently are not enforced and we would hope that the transfer to the Department of Public Health might assist the state's ability to enforce it. We also support the concept of insuring that utilization review companies keep up with current acceptable medical practices.

This bill would require that a significant amount of data be provided to the Department of Public Health from the managed-care entities. Based on these data, the department will prepare annual reports to facilitate consumer comparisons among managed-care entities. We would encourage the standardization of this reporting and of the analysis that would result in the annual reports so that the reports are both fair and reliable as a source of consumer information.

In addition, the bill would allow the commissioner to adopt regulations for the collection of any additional data deemed necessary for further evaluation of the quality of health services provided by managed-care entities. We support this provision of the bill for there is a vital need for responsible health-care data collection in this state. However, the data collection must be held to specific standards. The data must be collected and trended over time. Information derived from data collection must be clinically meaningful. An integrated data system must be developed in such a fashion that its knowledge base can be useful to physicians and its information be useful to purchasers of care. And the data must be treated in absolute confidence, and, when distributed publicly in an informational matrix, it must have been subjected to careful scrutiny with opportunity for input and comment by those parties affected.

The data collection and analysis must be free from conflict from interests other than the provision of the best possible information. Medical advisory panels must work closely with the data professionals to achieve the best possible information incorporating all adjustments necessary to provide validity. Those collecting the health-care data must be scientifically well established, knowledgeable, experienced, and well-versed in the principles of epidemiology and statistical analysis. And there must be significant input from and participation by physicians and others such as hospitals, insurance, business, and consumer groups.

Strong measures to ensure that quality health-care services are provided to patients covered by managed health-care plans are essential patient protections and are strongly supported by Connecticut's physicians.

Testimony of the Connecticut State Medical Society to the Public Health Committee regarding HB 5657, An Act Concerning Managed Care presented by David Parke, M.D. 5 March 1996

SENATOR Gunther, Representative MacDonald, members of the Committee, my name is David Parke, an eye physician from Wallingford and Chairman of the Connecticut State Medical Society's Legislative Committee. I am here today to speak in support of amending HB 5657, An Act Concerning Managed Care, to include a requirement that all health plans or sponsors of such health plans that restrict a patient's choice of physicians or hospitals offer at the time of enrollment an optional point-of-service feature so that patients who choose such plans may elect to self-refer to physicians or hospitals outside of the plan at a nonprohibitive additional cost to themselves.

Under a point-of-service option, patients retain the ability to go to a provider of their choice. The patient will incur a higher copayment for this privilege, but it would, among other benefits, allow a patient to continue to see her doctor if circumstances no longer permit that provider to be available on the patient's managed-care panel. It would provide an enrollee with another option, another choice.

However, the point-of-service option is only valuable to the patient if there is a cap on the out-of-pocket expenses that can be incurred. Although the patient's financial responsibility is greater, it should not be so high as to prohibit a patient from utilizing its benefits. Similarly, the additional cost in premium should be no more than the actuarial value of the coverage.

Thank you and I would be happy to take any questions.

Testimony of the Connecticut State Medical Society to the Public Health Committee regarding HB 5657, An Act Concerning Managed Care presented by John Bigos, M.D.

SENATOR Gunther, Representative MacDonald, members of the Committee, my name is John Bigos, a physician from New London, President-elect of the New London County Medical Association and Secretary of the Connecticut State Medical Society; I am here today representing the Medical Society to speak in support of HB 5657, An Act Concerning Managed Care.

I would like to specifically address our strong support for Section 8 of the proposed bill which outlines extensive mandatory provisions for internal complaint and grievance procedures for enrollees and to ask that you strongly consider amending the bill to include protections for providers who will take advantage of these procedures on behalf of their patients.

I would like to quote a recent letter to the editor of the *Hartford Courant* written by a Windsor Locks patient in praise of HMOs. The letter states, and I quote, "We cannot say enough in praise of our HMO. We have never had such attention, service and follow-up as we have had since joining . We have both been put on a three-month schedule for follow-up appointments as we both have lifelong health problems. There have been two instances when, but for the persistence of the doctor, one of us would have died." End of quote. But for the persistence of the doctor, one of us would have died. This women has summed it up in one sentence. However, what she misunderstood was that the persistence of the doctor did not come with her HMO care, but more than likely it came despite her HMO coverage. But her comments clearly show that the concept of managed care can work for the patient if and when the doctor is allowed to be persistent and to advocate for the patient. Unfortunately we are in serious danger of losing that freedom.

Just the other day I had a patient who was bleeding and on intravenous antibiotics; her blood pressure was falling and it was not medically appropriate for her to be released from the hospital. It was not even close to being medically appropriate. I received a letter from her HMO notifying me that they would not cover any additional hospitalization, but because the patient was under my care, it was my decision as to what was the appropriate treatment. We won't pay, but we are not going to be responsible for sending her home, so you make the call. It then became my job, as her physician, to appeal the HMO's decision, justify her continued stay in the hospital, continue to treat her, explain all of this to her, and than on top of all of this, wait to see if the managed-care plan will retaliate against me.

What if I wasn't there? What if my colleagues and I are no longer able to advocate for our patients. Without a doctor that you can trust, without a doctor who feels safe in standing up for what is right, without a doctor who can plead your case, you, the patient, will be at the mercy of the managed-care plan's medical decisions. And that is not a place where you want to be.

So I am here to say please consider strengthening the provider protections in this bill to allow physicians and other providers some level of comfort to advocate on behalf of what is right for their patients.

Testimony of the Connecticut State Medical Society to the Public Health Committee regarding HB 5657, An Act Concerning Managed Care presented by Michael Deren, M.D. 5 March 1996

SENATOR Gunther, Representative MacDonald, members of the Committee, my name is Michael Deren, a surgeon from New London and President Elect of the Connecticut State Medical Society; I am here today to speak in support of HB 5657, An Act Concerning Managed Care.

I would specifically like to address our support of Sections 7 and 16 which propose to have each managed-care plan enrollment agreement disclose in simplified language certain operational and organizational information to help the enrollee understand the limits and specifications of his plan. The disclosure requirements will not only provide the knowledge to enable patients and providers to make informed decisions about participating in a managed-care plan, but the publication of information will also have a self-policing effect on managed-care entities.

You might be assuming that as a provider I would like to see this disclosure to warn patients as to how terrible all these plans are and to punish the plans. To the contrary, we physicians would like to see this disclosure so that patients that do have a choice can choose managed-care plans that offer them the services and coverage that best serve them. Knowing a plan's limits on the availability of prescription drugs might help you determine if that plan is right for you. Disclosure can foster positive competition amongst plans and can encourage good plans with good services to continue providing those services because they will be able to attract patients who will be satisfied with their coverage.

Disclosure can also foster improvements in coverage. We hope that it will encourage other plans to improve their coverage and respond to the patient's demands. For those patients within a managed-care plan, knowledge can be a very powerful tool. The knowledge of the rules and incentives built into the plan can empower a patient to question plan procedures or decisions that directly affect their care. When given a voice, patients can influence positive change within their own plans.

If patients are aware of the nature and extent of their coverage when they come in for treatment, that is half the battle. I do not want to be the one in the position of telling my patient that his plan does not cover what he wants when he needs it. We should all be responsible consumers of health care and we should be responsible consumers of health insurance coverage. We support the inclusion of Sections 7 and 16 which would provide disclosure and allow us to choose our managed health-care plan responsibly.

Testimony of the Connecticut State Medical Society to the Public Health Committee regarding HB 5657, An Act Concerning Managed Care presented by Stephen Ducey, M.D. 5 March 1996

SENATOR Gunther, Representative MacDonald, members of the Committee, my name is Stephen Ducey and I am a physician from New London speaking today in favor of HB 5657, An Act Concerning Managed Care, and to ask that you strengthen the act to include provisions to protect the confidentiality of our patients' medical records.

The Connecticut State Medical Society requests that additional language be added to this bill to require that each health plan establish procedures to ensure compliance with all applicable federal and state laws designed to protect the confidentiality of patients' and participating providers' records. Health plan review of medical and financial records must be limited to records pertaining to that plan's enrollees and claims.

I understand that another committee of the state legislature is looking into this issue of patient confidentiality, but I would encourage you to strengthen these provisions within this managed-care bill. This is a very real issue in relation to managed care. I have seen first hand the disregard for patient confidentiality in relation to patient records in my practice. Last year I applied to participate on the panel of a large managed-care plan. While considering my application, the managed-care plan sent an auditor to my office to review my patient records. This auditor arrived at my office and expected to begin reviewing random patient records. This plan did not have the authority or consent to review any patient records. None of my patients were covered by this plan because I was not yet a provider in the plan. Still, the auditor fully expected to begin auditing my patients' records and was shocked when we questioned whether she had any signed releases from patients because she did not realize that such signed authorization was legally necessary!

We have to begin to address this issue of patient confidentiality because as we move closer to a fully automated patient record, these issues are only going to become increasingly difficult. While we support the gathering of medical outcomes and health-care data, we must not lose sight of patient confidentiality. Please consider amending HB 5657 to limit a managed-care plan's access to only the medical records of their own enrollees' claims.

Testimony of the Connecticut State Medical Society to the Public Health Committee regarding Senate Bill 353, An Act Concerning Optometry presented by Michael Deren, M.D. 27 February 1996

SENATOR Gunther, Representative MacDonald, and members of the Committee. My name is Michael Deren and I am a surgeon from New London and President-Elect of the Connecticut State Medical Society. I am here to testify on behalf of the Society in strong opposition to Senate Bill 353 "An Act Concerning Optometry."

I would like to begin by saying that we have many excellent optometrists in this state who are skilled at what they are trained to do: examination of the eyes for measurement of vision and refraction, fitting of glasses and contact lenses, screening of abnormalities of the eye, performing visual training exercises, and providing low vision aids. However, while we have respect for the optometry community, we must take a strong position against their attempt to expand their scope of practice beyond the practice of optometry and into the practice of medicine.

This bill is asking you to create optometric "physicians" who will practice "optometric medicine." While "physician" and "medicine" are just words, it is important to note that medicine is the art and science of the human body and the treatment of disease while optometry is founded in the science of optics, or vision. It is unwise and impossible to separate the treatment of eye disease from the practice of medicine and without medical training and education, an optometrist cannot safely treat eye disease. While optometry schools have expanded their curriculum to cover the treatment of disease in recent years, their curriculum expansion is simply not sufficient to train a practitioner to safely use lasers, prescribe narcotics, or treat patients with glaucoma and other potentially blinding and fatal diseases. An additional 75 hours beyond optometry school, as this bill would require for optometrists already in practice, does not compare with the length of study required of medical doctors, but more importantly, it is not an adequate amount of study or training.

There is a reason that all physicians are required to spend several years in a variety of clinical settings treating thousands of seriously ill patients under the supervision of experienced experts—that training is necessary in order to gain the knowledge necessary to safely and confidently treat patients independently. Unless you have had exposure to the thousands of ill patients, you cannot know how difficult and dangerous it is to treat patients or to perform even minor surgical procedures. Patients who present with the symptoms may have other medical conditions to take into consideration such as heart disease and diabetes. Unlike medically trained doctors, optometrists have never been trained to treat patients for these systemic diseases.

This bill would permit optometrists to practice with lasers. A laser is not just a light or a machine. A laser is a scalpel made of light, which is used to permanently alter human tissue. It is an emerging technology that carries the same risks and concerns to the patient as any other invasive surgical procedure. Because the patient can leave the medical facility after this procedure within hours or at the end of the one day, does not mean that laser surgery is an insignificant procedure to the human body. Any form of invasive procedure is an assault on the human system and requires that there not only be knowledge of the machines as taught by the manufacturers but that there be total understanding and knowledge of the systems of the human body that will react to this procedure.

In closing, I would like you consider your constituents. Your constituents with glaucoma may not know of the differences in training and education among eye doctors, but you do. One more level of optometry using the terms "medicine" and "physician" will lead to a dangerous level of confusion for our patients who are seeking appropriate, quality eye care and who are relying upon you to provide them with those assurances.

AROUND THE STATE

Dr. Kamens Retires

Fairfield resident highlights 45-year career in medicine—Edward A. Kamens, M.D., knew at a relatively young age that his goal in life was to become a surgeon. He achieved that, and much more. Now, after 45 years as a physician in this state, Dr. Kamens is retiring from his position as Senior Medical Consultant for the Connecticut Peer Review Organization.

Since its inception, CPRO has benefitted from his clinical guidance and leadership. Dr. Kamens can perhaps best be described as a tireless dynamo who has made hundreds of presentations and public appearances to promote quality improvements in health care, a major focus of the not-for-profit health agency. His face is a common sight at both the state and national capitals, where this dedicated physician shares his knowledge with elected officials. Before joining CPRO, he spent 28 years in private practice in the Bridgeport and Fairfield area.

"Above all, he has always remained a physician who cares about patients," said Marcia K. Petrillo, CPRO's Executive Director. "He served with us faithfully for 11 years and is recognized as a national leader in quality improvement programs. I will miss him as a colleague, and as a friend."

"Ed is a firm believer in the educational process and the positive impact it can have on patient care," said John Rodgers, M.D., President of the CPRO Board of Directors. "His philosophy in terms of quality improvement was years ahead of its time and is now reaching its fruition in all the continuing quality improvement programs that are being initiated in hospitals around the country."

"He's earned a lot of respect in the State of Connecticut and in the physician community," said Timothy B. Norbeck, Executive Director of the Connecticut State Medical Society. "He's very articulate and he does his homework." He called Dr. Kamens both dedicated and hard working.

"We at the Connecticut Hospital Association and the hospitals of the state will miss his leadership and unwavering commitment to patient care quality," added Dennis P. May, CHA President.

Dr. Kamens is a strong advocate of the HCQIP (Health Care Quality Improvement Project) approach to promoting quality improvement in the health- care system. He sees it as a more beneficial approach than the original Medicare case review mission of peer review organizations, which he called more proscriptive, specific, and onerous.

"We recognized very early that if there were problems, and if one could make an intelligent analysis of the causes of the problems, one could then work with the hospitals and physicians in promoting system changes," he said. "It took a long time to convince everybody that that would bring about the kind of improvements and quality we all wanted to see by providing physicians and hospitals with valid information."

He is pleased with the way CPRO has grown and developed over the years into a successful example of the benefits of an HCQIP approach. Now the interaction is cooperative and mutually beneficial to CPRO, hospitals, physicians, and other health-care providers. It also means high-quality and cost-effective care for the person who matters most—the patient.

"CPRO has become a model for how quality of care is improved continuously," said Dr. Kamens. "The key to changing the world is changing the system." He lauded organized medicine in Connecticut for recognizing this fact and supporting him in his efforts.

Dr. Kamens received a bachelor of arts degree from The Johns Hopkins University, then went on to earn a medical degree from the University of Vermont College of Medicine. That was in 1951, the same year he married his wife, Anne. The couple have two daughters, Gilbey and Ruth.

Postgraduate training at hospitals in Brooklyn and the Bronx was followed by many professional accomplishments. He was a general surgeon in private practice and was on the attending staff at Park City and Bridgeport Hospitals from 1956-84, including time as Chairman of the Department of Surgery at Park City and President of the Medical Staff. He holds numerous certifications.

Dr. Kamens is a 40-year member of the American Medical Association and local component societies. He served as both Chairman of the Board and President of the Fairfield County Medical Association. From 1979-1980, Dr. Kamens was President of the Connecticut State Medical Society. He has served as Chairman of the Connecticut Delegation to the AMA House of Delegates since 1991 and is currently President of the Council of New England State Medical Societies.

In addition, he has received multiple gubernatorial appointments and served on numerous boards of trustees. Dr. Kamens was honored as an Ettinger Fellow by the American Cancer Society and was named Physician of the Year by the Bridgeport Medical Society. Still another honor was a Resolution of Commendation of Service from the Connecticut State Medical Society House of Delegates.

"He's worn all the hats there are to wear," Mr. Norbeck said. He added that Dr. Kamens has always been willing to take on any new responsibility with enthusiasm and an unyielding belief that the most important components of the health-care system are the patients themselves, and the physicians who deliver the care.

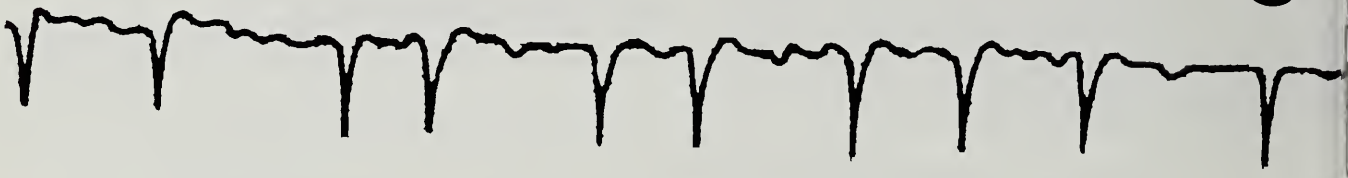
"For health-care professionals, it's a very trying time," Dr. Kamens said. "There's culture shock out there" as health care transforms from a fee-for-service system to a managed care world in which patient care decisions are not always left to the physician.

Even though he is officially retiring, Dr. Kamens will remain active in organized medicine. In addition to striving to improve his excellent golf game, he is working with a physician accreditation verification service to help doctors complete applications for hospital affiliations and participation in managed care plans. A self-confessed "C-Span junkie," he will continue to watch that channel for government news and indulge himself in one of his other favorite pastimes, reading.

Connecticut Peer Review Organization
Middletown

STROKE PREVENTION IN ATRIAL FIBRILLATION: Why, When, and How

CPRO



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The Department of Medicine at
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Featured Speakers:

Louis D. Fiore, MD
Boston University School of Medicine

David Silverman, MD
University of Connecticut School of Medicine

Martha J. Radford, MD, FACC
University of Connecticut School of Medicine
Connecticut Peer Review Organization

This seminar will be offered on two consecutive days at two different locations.
Please select the date that best fits your schedule and travel needs.

Wednesday, May 22, 1996
8:30 — 11 a.m.
Holiday Inn
Cromwell, Connecticut
(Dr. Fiore and Dr. Radford)

Thursday, May 23, 1996
8:30 — 11 a.m.
Marriott
Trumbull, Connecticut
(Dr. Silverman and Dr. Radford)

The University of Connecticut School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. The University of Connecticut School of Medicine designates this continuing medical education activity for 2 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association.

The University of Connecticut School of Medicine and the Connecticut Peer Review Organization gratefully acknowledge an educational grant from Du Pont Pharma.

A registration form is included on the next page.
For any questions, please call Lori Harris at (860) 632-6341.

ticoagulation for Prevention of Stroke for Medicare Beneficiaries in Connecticut

completed a study of anticoagulation for prevention of stroke in Medicare beneficiaries ≥ age 65 alized during 1994. This study was conducted because of the demonstrated benefit of this therapy: risk ke can be decreased by two thirds when anticoagulation is offered to appropriately chosen patients with fibrillation.

result of this study, 22 hospitals agreed to participate in a quality improvement project on atrial ation. Participating hospitals are: Greenwich, Sharon, Bridgeport, Griffin, Rockville, Charlotte erford, John Dempsey, Yale New Haven, St. Mary's, Middlesex, Hartford, St. Vincent's, St. Joseph's, m W. Backus, Danbury, St. Raphael, Windham, Stamford, New Britain General, New Milford, ey, and Waterbury.

original statewide study we found that:
Atrial fibrillation and stroke are common in Connecticut Medicare beneficiaries:

- 15,000 patients are hospitalized each year with atrial fibrillation.
- 10% of these patients were also hospitalized with a stroke.
- More than 20% of all strokes are associated with atrial fibrillation.

Patients admitted with stroke and atrial fibrillation experience higher hospital mortality than patients admitted with atrial fibrillation without stroke: 16% versus 9%.

At least 250 strokes could be prevented each year in Connecticut if anticoagulation was more widely considered for Medicare beneficiaries with atrial fibrillation. This medical benefit translates to potential saving of about $12M.

O and the University of Connecticut School of Medicine are jointly sponsoring a symposium on May 22 nwell) and again May 23 (Trumbull) to discuss with all practitioners the indications, contraindications, and ical consideration of anticoagulation for patients with atrial fibrillation. We invite your participation in easing the risk of stroke for Connecticut citizens with atrial fibrillation.

ha J. Radford, MD, FACC
ersity of Connecticut School of Medicine

REGISTRATION FORM
(please print)

e _____ Which Date? _____

ess _____

_____ State _____ Zip _____

e Telephone ( ) _____ Affiliated Institution ( ) _____

ialty _____

Registration is free and includes continental breakfast. Space is limited so send your registration form in early.
Mail form by May 8 to:

Lori Harris
Connecticut Peer Review Organization
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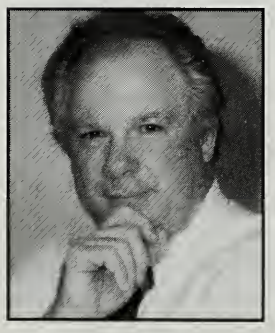

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Primary-care Quality Improvement of Mammography Rates: A Baseline Study

ERIC ROSENBERG, M.D.

ABSTRACT—In order to improve mammography screening rates, a primary-care physician group in Hartford County studied mammogram compliance rates, and reasons for noncompliance, in a group of 722 women, aged 50 to 64 years.

***Results.*—During the two-year study period, 598 (82.8%) of the patients had a mammogram and 16 were lost to follow-up. Of the 108 women without mammograms, six did not think that one was recommended. The test was not indicated for four. Forty did not follow through with recommendations, nine avoided mammograms out of fear, and 11 refused mammograms or physician visits. Thirty-seven others had a mammogram scheduled or performed during the next year.**

***Conclusions.*—Several hypothetical strategies for improving compliance are suggested by these results: computer notification of patients of upcoming and overdue due dates, supportive exploration of patients' resistances and fears, phone reminders from primary care physician offices, preventive medicine "tickler files," and coordination across specialties.**

Introduction

MAMMOGRAPHY is well-recognized for its ability to discover small breast cancers. This early detection results in increased cure rates and saved lives. Although some controversy exists for women under 50 years old, there is a firm consensus supporting mammography for 50- to 64-year-olds. The United States Public Health Service goal is to increase the two-year mammography rate among women aged 50 and older from a baseline of 25% in 1987 to at least 60% by the year 2000.[1]

Because of its proven preventive health benefits, mammography is highly desirable to corporate health purchasers. Several years ago, many of these employers began to demand detailed reports of HMO quality, finances, and operations in specific formats. In response to these requests, HMOs created a standard set of criteria and reports, the Health Plan Employer Data and Information Set, or HEDIS. For mammography, the performance "measure provides an estimate of women 52 to 64 years of age who had a mammogram during the previous two calendar years."[2]

Primary-care physicians order mammograms in the course of their ongoing preventive medicine relationships with women. In order to improve upon their current mammography screening, a major primary-care group in the Hartford area wished to assess its compliance with the mammography guidelines. The physicians also wanted to start a classic quality improvement cycle: to establish a baseline measurement, develop hypotheses for improvement, intervene, then remeasure to assess the effects of the interventions.

Material and Methods

The study measured the number of the primary-care group's female patients aged 50 to 64 in one HMO who had mammograms during a 1993 and 1994 study period, and the number who did not. Reasons for lack of mammogram compliance were sought through telephone interviews with the patients. Group patients were defined as

ERIC ROSENBERG, M.D., Medical Management Committee, Connecticut Primary Care Associates; Associate Staff, Hartford Hospital; Clinical Instructor, University of Connecticut School of Medicine.

those who had selected a group physician as their primary-care physician by 1 January 1993, and who had seen that physician at least once before 31 December 1994. (Of note, during the study period, the HMO had no gatekeeper system to require patients to contact their primary-care physicians).

The HMO provided the group with reports of those patients who did, and those who did not, have mammograms during the study period, based on their records of payments for mammograms. Each primary-care physician's office staff then interviewed its own patients who were on the "no mammogram" list, using a standard interview script and scoring sheet (see Appendix). The group analyzed the data statistically and by individual responses.

Results

The HMO's data identified 746 group female patients aged 50 to 64. Of those, 24 turned out not to meet "group patient" criteria, due to their never having met their designated primary-care physician. The remaining 722 patients included 598 (82.8%) who had had a mammogram, and 108 (15.0%) who had not. Sixteen patients (2.2%) could not be contacted.

The second phase of the study assessed the patients' reasons for not having a mammogram. The interview script precategorized nine possible responses, and allowed a free text response for "Other." Responses for 108 patients are summarized in Table 1.

Forty patients said that a mammogram had been recommended, but they "forgot," or "never got around to it." Nine noted fear of results, pain, or radiation. Four noted they did not realize they should get a mammogram, and two stated that their physician had not recommended one. Only one said she did not know where to go for one. None avoided mammography because of the expense. Four patients were inappropriate for mammogram screening, due to bilateral mastectomies or terminal illnesses. Because of data collection inconsistencies, 37 women were found to have had or scheduled mammograms during 1995 without reasons determined for their noncompliance during the 1993-1994 period. Nine had their mammograms before being contacted by the study, and 28 agreed to schedule one only after being contacted by the study.

Discussion

The overall measured mammogram rate of 82.8% in this group was excellent, and compares favorably with the U. S. Public Health Service goal of 60% by the year 2000.[1] The actual rate was undoubtedly higher, as patients were assigned to the "no mammogram" group if their primary-care office reported them as having had one in 1995, without clarifying whether another was done during the study period. It is also likely that some of those patients who could not be contacted had had one. The high rate shows the effect of strong primary-care promotion of mammograms.

Table 1.—Reasons for 108 Women Not Having a Mammogram

Reason:		**Number (%)**
Mammogram not indicated		4 (4%)
Mammogram recommended by physician, but:		98 (91%)
Forgot, or never got around to it	40 (37%)	
Afraid of pain	5 (5%)	
Afraid of results	2 (2%)	
Afraid of radiation	2 (2%)	
Didn't know where to get one	1 (1%)	
Other reasons:	11 (10%)	
Refused / didn't want to	6 (6%)	
Avoids doctors	2 (2%)	
Doesn't believe in mammograms	2 (2%)	
Doesn't want any preventive medicine	1 (1%)	
Mammogram done in or scheduled for 1995; (no reason specified for no study during 1993-94)	37 (34%)	
Mammogram never recommended by physician, or patient did not realize it was indicated		6 (6%)
Total		**108 (100%)**

The data collected from the 108 women who had no mammograms may help the group improve upon their already excellent compliance rate. Unexpectedly, only six of the women did not realize that a mammogram was indicated, or said that one had never been recommended by their physicians. They represent less than 1% of the 722 women in the study. On the other hand, 98 women never followed through with their doctors' recommendations. This latter group deserves the main focus of a quality improvement project.

Forty of these 98 women "forgot," or "never got around to it." This group is likely composed both of those who truly forgot, and those with an unexpressed hesitancy or refusal. Computer notification of patients in advance of mammogram due dates, or reminders of being slightly overdue, should improve the compliance of "true forgetters." The hesitant women need a supportive exploration of their feelings. This is probably best done through the primary-care physicians' offices, perhaps through follow-up of a list of patients significantly overdue for their mammograms.

Twenty-one other women openly expressed a variety of reasons for their refusal to get a mammogram. Those with specific fears are best handled in a primary-care office setting, where a relationship of trust, caring, and education are fostered. The five women who avoid doctors or preventive medicine, or do not believe in mammograms, are unlikely to be persuaded.

The remaining 37 of the 98 women included eight who had a mammogram during the first half of 1995 (and may or may not have had one during the 1993-94 study period, due to data collection problems). Twenty-nine more agreed to schedule a mammogram when contacted for this study; (similarly, some may also have had a mammogram during the study period). Thus over a quarter of the women who may have missed the examination during the study period agreed to one in 1995. The brief telephone call reminding a woman that she had no mammogram during the study period, and that her primary-care physician believed that she ought to have the study, actually had a powerful effect.

More formal study and quality improvement committee work is needed to generate and test further hypotheses for improving the mammogram compliance rate. Many other interventions may help, such as preventive medicine "tickler" files in patient charts, and use of non-physician personnel to encourage preventive medicine compliance at each patient encounter. Coordinating the efforts of gynecologists, internists, and family physicians would help. Computerized patient records could greatly improve compliance. By refining such interventions through a quality improvement process, the group should be able to maximize life-saving mammogram compliance.

Acknowledgement

I am indebted to Dr. Paul Bluestein and the ConnectiCare MIS staff, Ms. Karie Spallone, and to the Connecticut Primary Care Associates physician's office staffs for their invaluable assistance.

REFERENCES

1. *Healthy People 2000: National Health Promotion and Disease Prevention Objectives.* Washington, D.C.: Public Health Service, Government Printing Office, 1990.
2. *Health Plan Employer Data and Information Set and Users' Manual, Version 2.0.* Washington, D.C.: The National Committee for Quality Assurance, 1993, p. 24.

(see appendix next page)

Appendix

Suggested script for an interview of a mammogram study patient by a physician's office worker:

Hello, my name is _____. I work in Dr. _____'s office. He/she has asked me to give you a call today about mammograms. Dr. _____ is a member of Connecticut Primary Care Associates, a group of internists, family practitioners, and pediatricians. One of their goals is to improve the quality of health care in our region. The group is working with ConnectiCare on a study to measure the use of mammograms. All personal information will be strictly confidential.

I would like to ask you if you had a mammogram in 1993 or 1994?

IF YES ...

1. What was the date of the mammogram?
2. Where did you have it done?
3. What were the results?
4. Which doctor ordered the mammogram?
5. Would you please send a copy to Dr. _____ if you have one?

IF NO, ask, "Why not," and fit the answer into one of the following categories ...

1. I Didn't realize I was supposed to have one.
2. Mammogram was never recommended to me by a doctor.
3. Mammogram was recommended, but I forgot about it.
4. Mammogram was recommended, but I didn't get around to it.
5. I was afraid of mammogram results.
6. I was afraid of mammogram pain.
7. I was afraid of the radiation of the mammogram.
8. I though they were too expensive, and I would have to pay for them.
9. I didn't know where to go for a mammogram.
10. Other: (please write down details).

When did you first meet Dr. _____?

Let me briefly remind you that the American Cancer Society and Doctor _____ recommend that the average woman without special risk factors should have a mammogram in her late 30s, every other year in her 40s, and every year beginning age 50. Thank you for your time.

Estimating Breast Cancer Treatment Charges in Connecticut

ANTHONY P. POLEDNAK, PH.D., IVAN P. SHEVCHENKO, M.S., AND JOHN T. FLANNERY, B.S.

ABSTRACT—Previous studies of estimated costs for cancer treatment have been limited to elderly patients or to specific health maintenance organizations. Data from the statewide population-based Connecticut Tumor Registry on a random sample of 407 breast cancer patients diagnosed in 1991 were linked with a statewide hospital-discharge database, to estimate charges (through September 1993) for inpatient and ambulatory surgery care. For the 377 cases (92.6% of 407) successfully linked, average charges attributed to breast cancer care declined with age, increased with extent of disease (stage at diagnosis), and increased with extent of surgery; these associations persisted in multivariate analyses. Total hospital-related charges for comorbid conditions (during 1991-93) were considerable by age 45 to 64 years. The merged database should be most useful in estimating charges for: cancers treated mainly by surgery (including ambulatory surgery at hospitals); comorbid conditions; and terminal care.

INTEREST in estimating costs for cancer treatment is growing, as the importance of cancer increases in an aging population[1] and as cardiovascular diseases decline in relative importance as causes of death.[2] The ongoing program linking the National Cancer Institute's (NCI's) Surveillance, Epidemiology, and End Results (SEER) and the Health Care Financing Administration's (HCFA's) (Medicare) databases has been shown to be useful for assessing cancer treatment costs, but a major limitation is the lack of information on nondisabled persons under age 65 years.[3] Malignant neoplasms were the most common principal diagnoses (among chronic conditions) for stays in U.S. short-stay hospitals in 1985 in both men and women 45 to 64 years old.[4] A recent report presented cancer treatment costs in a health maintenance organization in Washington State, for selected cancer sites (breast, colon, and prostate) in all age groups.[5] Data on cancer-related treatment costs are needed from multiple geographic areas with different types of health-care delivery patterns.[6]

This pilot study assessed the potential value of linking a statewide hospital discharge database with a population-based statewide cancer registry in Connecticut to estimate billed charges (referred to as "charges" in this paper) for the treatment of one type of cancer—ie, breast cancer, the most common type of cancer in U.S. women.[7]

Methods

The Connecticut Health Information Management and Exchange (CHIME) database, maintained by the Connecticut Hospital Research and Education Foundation, covers hospital inpatients in all licensed acute-care (general) hospitals in Connecticut and (since FY 1991) all ambulatory surgery patients at these hospitals. This study is limited to estimating charges, which are generally greater than actual costs or expenses paid by insurers or patients (uninsured, or insured but with copayments); other studies have involved actual payments from Medicare[3] or costs for patients at an HMO that has its own inpatient and outpatient services.[5]

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Supported in part by Contract NOICN05226 between the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) Program and the Connecticut Department of Public Health.

Table 1.—Stage at Diagnosis and Follow-up by Type of Surgery

Variable	Partial Mastectomy (n=193) No.	%	Modified Radical Mastectomy (n=182) No.	%
Stage at diagnosis				
In situ	98	50.8	38	20.9
Local	61	31.6	58	31.9
Regional	34	17.6	86	47.3
Follow-up				
Died: Before 9/93	1	0.5	9	4.9
9/93 or later	8	4.1	13	7.1
Not known dead	184	95.3	160	87.9
Last contact in:				
1991 or 1992	14	(7.6)	14	(8.8)
1993: before 9/93	16	(8.7)	14	(8.8)
9/93 or later	11	(6.0)	8	(5.0)
1994 or 1995	143	(77.7)	124	(77.5)
Total	**184**	**(100.0)**	**160**	**(100.0)**

Notes: Follow-up data are from the Connecticut Tumor Registry. September 1993 was the cut-off date for information on charges in the hospital discharge database (see text).

The second database was the population-based Connecticut Tumor Registry (CTR), part of NCI's SEER Program. The CTR participated in SEER's Patterns of Care (POC) study[8] of first course of cancer treatment (ie, within four months of initiation) in random samples of all breast cancer cases. Included were cancers diagnosed at in situ, local, and regional stages (defined similarly by the CTR and SEER);[7,9] distant stage cases were excluded. The POC sample of 407 breast cancers diagnosed in Connecticut residents in 1991 (the last year of the POC Study) was selected because data on the first course of cancer treatment were more extensive (ie, involving contacting physicians about treatment of specific patients) than routine SEER data which are obtained from hospitals. Thus, POC data were useful in assessing the limitations of CHIME data.

Data on hospital, hospital medical record numbers, and birthdates recorded in the CTR for each of the 407 POC study's breast cancer cases were linked, using a matching algorithm,[10] with CHIME data for October 1985 to September 1993 discharges. Some 319 cases matched (exactly) on hospital medical record number, complete birthdate, hospital of diagnosis, date of hospital admission, and diagnosis of breast cancer; 39 other cases matched on all of these items except hospital and/or exact day of admission. The 19 cases that matched on all variables except personal identifiers were found to be explained by missing medical record numbers (in the CTR) or data-entry errors in either database. Excluded from analyses were 14 cases with a successful CTR-CHIME linkage but no record of breast cancer diagnosis or treatment in CHIME, and 16 that did not link successfully.

Of the 377 cases (92.6% of 407) used for estimating charges for hospital inpatient and ambulatory surgery care, 137 were in situ, 119 localized, and 121 regional stage at diagnosis in the CTR. Mean age was 54.3 (range 25 to 92) years; the standard deviation of distribution of ages was 13.8 years, and the standard error of mean was 0.7 years. For some analyses, cases were divided into three age groups (25 to 44, 45 to 64, and 65+ years). Partial mastectomy was defined (as in SEER) as segmental mastectomy, lumpectomy, quadrantectomy, tylectomy, wedge resection, nipple resection, or excisional biopsy (N=193); 182 patients had more extensive surgery, and two patients had no record of cancer-directed surgery.

In CTR records 11 cases were known to have died prior to September 1993, or the end of follow-up in CHIME. The CTR pursues follow-up, mainly by contacting hospitals and through linkage with state vital records and motor vehicle records (date of renewal of driver's license). Loss to follow-up (usually due to migration out-of-state) prior to the cut-off date for CHIME data could have occurred, but the year of last contact was 1993 or later for all but 28 cases not known to have died (Table 1). Of these 28 cases,

Table 2.—Hospital-Related Charges ($) Attributed to Breast Cancer Treatment, by Stage at Diagnosis and Type of Surgery, among Connecticut Residents Diagnosed in 1991

	Stage at Diagnosis							
	In situ		Local		Regional		Total	
Surgery	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Partial	4,266	478	7,671	852	8,028	1,394	6,004	453
	(2,618)		(6,541)		(6,381)		(4,718)	
Modified radical	11,028	855	11,221	1,216	14,880	1,853	12,910	980
	(9,084)		(9,190)		(9,593)		(9,487)	
Total	**6,127**	**490**	**9,402**	**751**	**12,961**	**1,400**	**9,354**	**556**
	(4,358)		**(7,320)**		**(8,713)**		**(6,831)**	

For sample sizes, see Table 1. The total sample includes two cases with no record of cancer-directed surgery.
Medians are shown in parentheses.
SE: Standard error of the mean.

six had a later hospital admission in the CHIME database; 14 were in the partial mastectomy group and 14 in the modified radical mastectomy group.

Average and total charges attributed to breast cancer diagnosis (including breast biopsies at hospitals) and treatment were estimated by stage and age at diagnosis and type of surgery. Included in these charges were hospitalizations coded to plastic surgery aftercare and breast implants, secondary neoplasms, and possible complications of treatment, such as mononeuritis of the upper limb (after mastectomy) and acute pericarditis (after radiotherapy). Excluded were charges for admissions (after the diagnosis of breast cancer) with principal diagnoses judged to be unrelated to breast cancer treatment (eg, cardiovascular and cerebrovascular diseases, diabetes mellitus, cataracts, uterine leiomyomas, and other cancers such as ovarian).

Average charges were compared by age group, stage at diagnosis, and for partial mastectomy *vs* modified radical mastectomy (based on SEER surgery codes). Breast-cancer-attributable charges were analyzed by multiple linear regression; independent variables were age (single years), stage at diagnosis (coded from "0" to "2" for in situ, local or regional), and type of surgery (coded as "1" for modified radical and "0" for partial mastectomy).

Results

Charges attributable to breast cancer treatment increased with advancing stage at diagnosis, and were more than twice as high for regional than for in situ stage (Table 2). The larger number of early deaths in cases with modified radical than partial mastectomy (9 *vs* 1) was expected because partial mastecomy was used less frequently for later-stage cancers (Table 1), as reported in the literature.[11,15] Mean charges were higher for patients with modified radical mastectomy compared with those with partial mastectomy within stage at diagnosis.

However, it was found that the CHIME database did not include charges for radiotherapy and most chemotherapy. According to the POC study, 111 (30.9%) of the 377 linked cases had radiotherapy and 114 (30.2%) had chemotherapy as part of the first course of treatment. Charge data in CHIME are more complete for cases treated with modified radical mastectomy than for those with partial mastectomy, because only 3.8% of the former had radiotherapy (although 37.9% had chemotherapy). Completeness of charge data also would vary by age, because 68.3% of cases diagnosed at age 65 or older and 41.9% of those age 45 to 64 (*vs* only 28.3% of 25 to 44 year-olds) had neither radiotherapy nor chemotherapy coded in the POC study. Although use of radiotherapy did not vary across the age groups compared, chemotherapy declined with age at diagnosis, reaching only 3.9% at age 65+ years. While most chemotherapy is given in an outpatient (often nonhospital) setting, 11 cases had CHIME codes for installation of an infusion pump within four months of diagnosis (ie, within the period defined as first course of treatment); in the POC database, all 11 were coded as having chemotherapy received or recommended in the first course of cancer treatment. Also, seven cases in CHIME had chemotherapy for secondary cancers beyond the first course of treatment (a time period not considered in the POC study).

In a multiple regression model, all independent variables were statistically significant predictors of estimated charges attributed to breast cancer diagnosis and treatment—ie, age in single years (t= -2.95, P=.003), type of surgery (modified radical *vs* partial mastectomy, t=5.07, P<.001), and stage at diagnosis (t=3.11, P=.002) (model

Table 3.—Hospital-Related Charges Attributed to Breast Cancer Care *vs* Other Conditions, by Age at Diagnosis of Breast Cancer

Age	No.	Attribution	Mean	SE	Total
25-44	113	Breast cancer	11,848	1,455	1,332,215
		Other (N=18)†	10,086	2,553	181,556
45-64	160	Breast cancer	8,579	679	1,372,712
		Other (N=35)†	13,820	4,907	483,688
65+	104	Breast cancer	7,836	634	814,901
		Other (N=33)†	20,154	6,991	665,080

†Number of cases with hospital admissions for conditions not related to breast cancer.
SE: Standard error of the mean.

adjusted $R^2 = 0.136$). Thus, age was negatively associated with charges, independent of stage and type of surgery. Exclusion of the 10 cases (with surgery) known to have died (prior to October 1993, or the end of follow-up in CHIME) had little effect on the regression model (data not shown).

Some 86 cases (22.8% of 377) had hospital admissions (through September 1993) with diagnoses other than breast cancer subsequent to the diagnosis of breast cancer. For 39 of these 86 cases, total charges for breast cancer were exceeded by other charges. These other charges were relatively low for age 25 to 44 years (involving only 18 of 113 women or 15.9%) but substantial for ages 45 to 64 (35/160 women or 21.9%) and 65+ years (33/104 women or 31.7%) (Table 3). For the oldest age group, the total charges for the 33 women with admissions for comorbid conditions (in 1991-93) were only slightly lower than total breast cancer attributable charges for all 104 women.

Examples of high charges for hospitalizations for comorbid conditions were: cholecystitis with peritonitis and other complications ($136,015); cholecystitis with ischemic heart disease and other conditions ($192,803); chronic lung disease and psychiatric disorders ($99,147) in a woman with a history of admissions for these conditions prior to breast cancer; ovarian cancer, including chemotherapy ($74,756); and lymphoma of the stomach ($17,350). Another example involved an elderly woman with hypertension, heart failure, femoral fracture, and senile psychosis (total charges, $68,493). Cardiotoxic agents, especially adriamycin (doxorubicin),[16] could be involved in heart failure, but the latter patient had no record of receiving chemotherapy in the first course of treatment, according to information provided by the hospital to the CTR and a response (in 1993) to a physican inquiry in the POC Study, which attempted to collect information on specific chemotherapeutic agents (including adriamycin). Routine reporting of chemotherapy to SEER registries is incomplete.

Discussion

In the merged CTR-CHIME database developed for this pilot study, the CTR contributed data on stage at diagnosis and follow-up, while CHIME provided data on charges for treatment for cancer and other conditions. The CTR pursues follow-up of all cancer patients, and additional follow-up information on a few cases was obtained by examining hospital discharges. The differences in hospital-related treatment costs for partial mastectomy *vs* modified radical mastectomy were not related to differential loss to follow-up (Table 1).

Modified radical mastectomy still predominated among cases diagnosed in 1991 in SEER areas,[11,12] but use of breast conserving surgery has been increasing over time for local and regional stage breast cancer; treatment decisions are often complex.[13,14] In the POC sample for 1991 in Connecticut (including in situ, local, and regional stage cancers), partial mastectomy was more common than more extensive surgery (Table 1); late (distant) stage cancers were excluded, but comprise only a small proportion of all breast cancers[7] and the issue of use of partial *vs* modified radical mastectomy is not relevant. Use of partial mastectomy has been recommended for most early-stage cancers.[15] This pilot study found that a major limitation of the current CTR-CHIME linked database is the lack of information on charges for radiotherapy and most chemotherapy. The mean charge was about twice as high for women who received modified radical than for those who had partial mastectomy (Table 2), reflecting longer and more complex hospitalization for the former. However, a study at a university hospital (University of California—Los Angeles Medical Center) that included radiotherapy charges found a ratio of only 1.31; costs for travel and parking were included, and, although low relative to other costs (especially hospitalization), were higher for lesser surgery with breast irradiation than for modified radical surgery with reconstruction.[1]

Despite the study limitations, charges clearly increased with advancing stage at diagnosis (Table 2) due to increasing length of hospital stay. The decline in charges with advancing age (Table 3) is consistent with lower intensity of initial treatment for older patients in both fee-for-service and managed-care settings.[5] Thus, use of the cost estimates from studies limited to patients diagnosed at age 65 years and older[3,17] would underestimate treatment costs for patients in younger age groups.

A major strength of the CTR-CHIME linked database is the ability to examine the frequency of and charges for treatment of comorbid conditions (ie, noncancers) that involve hospitalization or ambulatory surgery. Total charges for all patients combined for hospitalizations for comorbid conditions subsequent to the diagnosis of breast cancer were considerable for ages 45 to 64 years as well as for older ages (Table 3). These charges represent only those accrued from cancer diagnosis in 1991 through (maximally) September 1993; longer follow-up (now in progress) will identify additional hospitalizations and associated charges.

Data on breast cancer treatment costs (including outpatient and physician services) are available for most patients diagnosed at age 65 years and older, except for HMO members.[17] However, cancers are the leading cause of death in the U.S. for ages <65 years.[2] Enhancing the value of the merged CTR-CHIME database for breast cancer patients diagnosed at <65 years of age would require expansion of the hospital discharge database to include data for outpatient radiotherapy charges. Obtaining chemotherapy charges would require linkage with other databases such as Medicaid (now involved with managed care or HMOs).

In conclusion, charge data from the merged CTR-CHIME database in Connecticut are (at present) most useful for patients with cancers for which treatment is often limited to surgery (eg, colon cancer and invasive cervical cancer). While few breast cancer patients in the present study had died, the database also should be useful for estimating charges for the "final" (or "terminal-care") phase of cancer treatment (ie, six months or less before death), when inpatient hospital charges tend to be high.

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Abstracts: 33rd Annual Orthopaedic Conference, Connecticut Children's Medical Center, Newington, Department of Orthopaedic Surgery

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The 33rd Annual Orthopaedic Conference was held Friday, 27 October 1995, at the Newington Campus of the Connecticut Children's Medical Center. The visiting guest professor, Marc A. Asher, M.D., from the University of Kansas Medical Center presented his analysis of the three-planar realignment of the spine in scoliosis of both idiopathic and neuromuscular origin. These abstracts reflect only a brief overview of the long-standing commitment he has had to the analysis and treatment of spinal deformity. In addition to his clinical commitments at the university, he is curator of the Harrington Library which contains all of the collected writings of Paul Harrington, M.D., recognized worldwide as the developer of the first spinal implant system.

Again this year, a former orthopaedic surgery fellow, Gregory A. Mencio, M.D., returned as a guest to present a study of the efficacy and safety of "Ketamine Sedation for the Ambulatory Management of Pediatric Fractures Performed at the Vanderbilt University Medical Center." In addition, Vincent J. Turco, M.D., widely known for his lifetime commitment to the treatment of clubfoot deformity, discussed a unique subset of these deformities called nonidiopathic talipes equinovarus. Walter B. Greene, M.D., a former Newington orthopaedic fellow, presented an in-depth analysis of the potential problems associated with single-pin fixation for slipped capital femoral epiphysis.

This year's conference topics focused on congenital and acquired deformities of the musculoskeletal system in children. The importance of a regional pediatric center was highlighted by the collection of rare and unusual congenital deformities such as the "Ulnar Deficient Extremity" (Tomany and Watson), and "Vertebral Anomalies Associated with Spinal Dysraphism" (Riley and Banta). In spite of increased attention to the detection of developmental dislocation of the hip, cases continue to present after the perinatal period, and those failing orthotic management continue to pose a challenge to the surgeon for the best operative procedure for correction of acetabular dysplasia (Carangelo and DeLuca). Outcome studies continue to attract attention of treating physician, hospital administrators, and most importantly, managers of health system networks. Two important reports provided additional long-term assessment of neuromuscular deformities (Murray et al and Qasim et al).

The Newington Motion Analysis Laboratory, now entering its 11th year of operation, remains a valuable asset in preoperative analysis of patients with abnormalities in gait, especially those children with cerebral palsy (Ferrari et al). The Orthopaedic Department continues its strong interest in the clinical assessment of new spinal implants for the correction of scoliosis. This year a preliminary report was presented comparing two distinctly different segmental spinal instrumentation systems (Youssef et al).

The James M. Cary, M.D., Award, which is presented annually for outstanding orthopaedic research by a resident, was awarded to Andrew Caputo, M.D., for his paper evaluating "Varus Deformity of the Femur as a Significant Component of Severe Infantile Genu Vara."

With the conclusion of the 33rd Annual Orthopaedic Alumni Day program, the administrative and orthopaedic staffs look forward to future programs in collaboration with other medical and surgical specialties at the new Connecticut Children's Medical Center which opened 2 April 1996.

Three-Planar Realignment of Idiopathic Scoliosis

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The surgical goals of scoliosis treatment are a balanced spine, maximum deformity reduction including anatomical alignment of the end instrumented vertebrae, and motion segment preservation where possible. Achieving these goals with the current generation of implant systems requires a clear understanding of the deformity and its evolution.

Scoliosis is a three-dimensional deformity in which the apex vertebra is laterally translated, rotated, and usually anteriorly (thoracic) or posteriorly (thoracolumbar/lumbar) translated. The end vertebrae are tilted and may be rotated and extended, especially in the upper thoracic spine.

Idiopathic scoliosis deformity evolution is most consistent with a geometric torsion, a property of a line rather than a mechanical torsion in which adjacent segments are rotated on each other, such as is seen in degenerative scoliosis.[1,3] The geometrical torsion of idiopathic scoliosis is imperfect, being heavily influenced by the rib cage, the asymmetry of coronal plane vertebral shape, and muscle forces.

Adolescent idiopathic scoliosis presents as one, two, or three torsions. Single torsions are the most common and include King-Moe III and IV, thoracolumbar, and lumbar curves. The most common double torsion patterns are thoracic and thoracolumbar or lumbar and include King-Moe I and II categories. The other double torsion is the double thoracic (King-Moe V) curve pattern. Finally, there may be three torsions: high thoracic, thoracic, and thoracolumbar, the triple curve pattern.

The torsional realignment of scoliosis utilizing posterior instrumentation is based on sequential segmental application of translational and angular loads at apex, periapex, and end vertebrae. The vertical translational loads of compression and distraction are the last corrective forces applied.

The upper instrumented vertebra is usually the centered vertebra, defined as the first vertebra above the upper end vertebra that is midway between the chest cage sides. This is usually two levels proximal to the upper end vertebra, except in double thoracic torsion curvature, where it is the upper end vertebra. The lowest instrumented vertebra is typically one level below the lower end vertebra for King-Moe III and IV, the lower end vertebra for King-Moe II with exclusion of the lower curve, one level below the regional apex vertebra of partially included thoracolumbar/lumbar curves of King-Moe II curves, and the lower end vertebra of King-Moe I, thoracolumbar, and lumbar curves. It is never L4 unless there are six lumbar curvatures. Many thoracolumbar and lumbar as well as King-Moe I curves are best managed with anterior thoracolumbar/lumbar instrumentation following the guidelines of John E. Hall.[2]

To accomplish the torsional correction of the thoracolumbar/lumbar portion of adolescent idiopathic scoliosis curves with posterior instrumentation utilizing the lower end vertebra described above, it is necessary to use screw anchors placed through the pedicles bilaterally at the lower instrumented vertebra and selected proximal vertebrae bilaterally to the apex.

To address the three-planar realignment of idiopathic scoliosis, five instrumentation sequences have evolved: single thoracic, single thoracolumbar/lumbar, double thoracic, double thoracic thoracolumbar/lumbar, and triple. Each sequence shares the principle of translating and angulating the spine to two anatomically contoured longitudinal members utilizing variable position connections. Upper instrumented vertebra coronal and sagittal plane angular position is gained at the time the upper foundation is placed. Translation of the apex posteriorly (concave rod placement first) or anteriorly (convex rod placement first) sets the stage for creation of transverse plane torsions and counter torsions through widely, bilaterally placed apex anchors. Lower instrumented vertebra coronal plane alignment is adjusted last.

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Three-Planar Realignment of Neuromuscular Scoliosis

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Patients with neuromuscular scoliosis may be divided into ambulatory or nonambulatory categories and pelvic aligned or malaligned subcategories.

In those ambulatory patients with normal pelvic alignment, the instrumentation guidelines used for idiopathic scoliosis may be largely followed except that it is important to be aware of exaggerated sagittal plane curves. With pelvic malalignment it is necessary to realign and fuse to the pelvis.

In nonambulatory neuromuscular scoliosis patients, it is almost always best to realign and fuse T2 or T3 to the pelvis. The possible exception to this is the spina bifida cystica patient, where it may be desirable to leave L5-S1 mobile if there is no pelvic deformity and upper thoracic mobility if the thoracic spine is hypokyphotic.

In nonambulatory neuromuscular patients, there are three general deformity categories: thoracolumbar/lumbar kyphoscoliosis, hyperlordosis, and hyperkyphosis. The main subcategories of the thoracolumbar/lumbar kyphoscoliosis category are associated pelvic flexion (the most common), associated thoracic hyperkyphosis, and associated pelvic extension (uncommon). The hyperkyphosis category includes the subcategories of thoracic hyperkyphosis and lumbar hyperkyphosis as is typically seen in spina bifida cystica. Because combinations of deformities often occur, careful analysis of the deformity is necessary.

Correction is accomplished by the segmental creation of a bilateral anatomically contoured longitudinal member construct anchored at key points by foundations that utilizes segmental fixation with variable position connections in such a way that coronal, sagittal, and transverse plane force couples can be applied as needed. In the end a stable, strong, and durable construct is created eliminating the need for external support in almost instances.

In the period from March 1989 through February 1993, while utilizing these principles, 20 patients were instrumented and fused to L5 or above and 47 instrumented to the ilium with intrailiac posts and fused to the sacrum. For these 47, we have been able to obtain effective correction through posterior surgery only in 83% of the patients, the scoliosis correction being 63% and pelvic obliquity correction 81%, stable at two-year follow-up. Ninety-eight percent of the patients, parents, and caregivers were satisfied.[1] The principal lesson learned was the need for hook-claw constructs proximally, which are more stable than wire anchors.[2]

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Ketamine Sedation for the Ambulatory Management of Pediatric Fractures

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The efficacy and safety of ketamine sedation in the ambulatory treatment of pediatric fractures was evaluated. We prospectively studied 32 consecutive patients (age 12 months to nine years, mean five years) with isolated, closed fractures of the upper (29) or lower (3) extremity who underwent closed reduction in the emergency department at our Level I trauma center. Ketamine hydrochloride was administered intravenously (0.5-2.0 mg/kg, titrated to effect) or intramuscularly (4mg/kg, as a one-time dose), and our standard emergency department protocol for monitoring children under conscious sedation was followed. The time from induction of sedation to manipulation of the fractures ranged from one to seven minutes and to final immobilization, six to 36 minutes.

Airway patency, independent respirations, and oxygen saturations above 93% (on room air) were maintained in all patients. No hemodynamic instability was encountered at any time. The average Children's Hospital of Eastern Ontario pain score (CHEOPS), rated by the orthopaedic surgeon treating the patient, was 6.4 (range 4-12). Parental response was favorable with a high over all satisfaction rating of 3.7 (range 1-4) and a low perceptual pain scale score of 1.7 (range 1-5). Minor complications included nausea (2) and vomiting (2) which occurred well into the emergence phase of anesthesia. There were no cardiorespiratory problems. No patients experienced hallucinations or nightmares. In summary, ketamine sedation facilitated the reduction of pediatric fractures in our emergency department. Profound sedation following both intravenous and intramuscular injection was reliably and safely achieved in a timely manner. Patient, parent, and physician satisfaction was high. No major complications were encountered. We conclude that ketamine can be effectively used in the emergency department for the reduction of closed fractures in children.

Nonidiopathic Congenital Clubfoot: Management and Prognosis

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Recognition of nonidiopathic talipes equinovarus (TEV) is obvious when the newborn has stigmata of a genetic syndrome or of a neurological abnormality. For example, there is universal agreement that TEV associated with diastrophic dwarfism is the most recalcitrant and difficult deformity to correct. Similarly clubfoot deformity associated with myelomeningocele, spinal defects, sacral agenesis, hydrocephalus, Moebus Syndrome, Prader-Willi Syndrome, toxic fetal syndrome, arthrogryposis, and muscular dystrophy have a poor prognosis. Although these feet rarely respond to nonoperative treatment, serial manipulation and cast treatment should be started early, and after maximum correction with casting is obtained, an attempt to maintain correction with orthoses and stretching exercises is important. Early surgery, especially with repetitive operations causes fibrosis of soft tissue with contractures similar to that seen in the arthrogrypotic foot.

"Atypical" idiopathic clubfoot deformity represents a small percentage of congenital clubfoot pathology. The "atypical" TEV deformity is usually suspected after two or three months of treatment by the appearance of rocker bottom deformity with associated hypotonia, "the floppy child," which are the most common distinguished clinical findings. Early surgery in this subgroup of feet is prone to develop a characteristic severe flat foot which is cosmetically and functionally worse than the uncorrected clubfoot.

When the author suspects "atypical" TEV (usually at two to three months) serial casting is discontinued. The treatment is not operative with early surgery being avoided. The use of a Denis Browne bar with passive stretching exercises and plantar proprioceptive stimulation and walking are encouraged. Pediatric neurological consultation is recommended for children with atypical TEV. In the author's hands, nonoperative treatment has produced 90% good to excellent results with no severe flat foot deformity. The remaining 10% required soft tissue surgery at four to six years of age with gratifying results.

Delayed Onset of Recurrent Slippage Following Single Screw Fixation for Slipped Capital Femoral Epiphysis (SCFE)

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Single screw fixation has become the standard of care for most children with SCFE. We report a patient who had delayed onset of recurrent slippage, a complication not previously recorded for this method of treating SCFE.

At age 10 years, 10 months, this African-American female presented with a four-week history of antalgic limp and pain. Physical examination showed for limited right hip motion. Radiographs demonstrated a mild right SCFE

with a posterior slip angle of 22°. The Oxford skeletal maturation score was 24 (interpretation by Randall T. Loder, M.D.). Body weight was 38.1 kg (55th percentile) and height was 142.2 cm (30th percentile). A single 6.5 mm cannulated screw was inserted without difficulty. Postoperative radiographs showed good position of the screw (1,1 by the method of Aronsson and Calson and 0.04, 0.03 by the method of Wad et al). Postoperative management included crutch-assisted ambulation for six weeks. The patient subsequently demonstrated no pain or limping.

Seventeen months after the initial operation, the patient again presented with a three-week history of the insidious onset of recurrent pain and limping. Physical examination revealed loss of hip motion. Body weight was now 51.6 kg (80th percentile) and height was 153 cm (50th percentile). Radiographs demonstrated an open physis, but no apparent breakage or backing out of the screw. The pinpoint ratio and pin-physis ratio were unchanged, but the posterior slip angle had increased to 55°. Thyroid function studies were normal.

At the second operation, three cannulated screws were inserted, with one exchanged for the previously placed screw. When palpating the channel of the previous placed screw, it was obvious that bone resorption had occurred at the physis-screw junction.

In a previous report of skeletal age at onset of SCFE, the Oxford score averaged 34.2 ± 1.6 for females. By comparison, the Oxford score of our patient was 24. Her skeletal immaturity contributed to delayed closure of the proximal femoral physis and recurrent slippage. This case suggests that more than one pin should be considered for fixation of SCFE in patients with relative skeletal immaturity.

Follow-up of the Ulnar Deficient Extremity

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The ulnar deficient extremity is a rare congenital hand anomaly that has been managed by both operative and nonoperative means. The records and radiographs of the nine patients who were diagnosed with this congenital hand defect and evaluated at Newington Children's Hospital between 1961 and 1991 were retrospectively reviewed. All patients were evaluated and treated by the senior author. The mean age at presentation was one year and five months. The mean length of follow-up was nine years. Radiographs were classified according to the criteria of four classification systems. Classifications based upon the presence or absence of the ulnar ossification center and its associated distal epiphysis were useful in delineating the presence of a fibrocartilaginous anlage. Clinical findings were similar to those found in previous large series with the exception of a higher incidence of ulnar deviation (91%) at presentation in our series.

Nonoperative treatment consisting of serial casting and splinting was attempted in three cases. The mean duration of nonoperative treatment was six months. All patients developed progressive deformity and revealed the presence of a fibrocartilaginous anlage at surgery. The most common operative treatment consisted of anlage resection which was completed in six of the eleven extremities. No complications were associated with anlage resection. One recurrence of ulnar deviation developed after anlage resection and an incomplete resection occurred in one other case due to bowstringing of the ulnar neurovascular bundle.

At a mean follow-up of nine years all patients in this study were documented to have a good functional outcome with the exception of one patient who developed a Volkmann's ischemic contracture after a one-bone forearm procedure. This study demonstrates a low complication rate and good functional outcome in patients undergoing anlage resection. Nonoperative treatment, consisting of serial casting and splinting, was found to have equivocal benefit, but should still be a treatment option until severe or progressive deformity develops.

Vertebral Anomalies Associated with Spinal Dysraphism

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The charts and radiographs of all patients seen at Newington Children's Hospital between 1930 and 1994 for spinal dysraphism were reviewed. Spinal dysraphism refers to the embrylogic malformation resulting in failure of midline closure of the axial skeleton which leads to a wide variety of so called dysraphic defects, the most common of which is spina bifida, but including such entities as dermoid cysts, meningoceles, lipomas, and diastematomyelia. Eighty-nine patients were noted to have associated congenital vertebral anomalies representing an incidence 17%. Of these, 30 had congenital kyphosis, 10 kyphoscoliosis, eight isolated hemivertebra, five a unilateral unsegmented bar, five block vertebra, and six patients had associated sacral agenesis. In 41 of the 89 patients, multiple anomalies were noted and in four they were of such complexity that they were not easily classifiable into any of the above categories. Forty-nine patients required surgery to correct progressive spinal deformity in either the sagittal or coronal plane. Forty-seven of the patients required spinal surgery to stabilize or correct their deformity, and 18 required surgery prior to the age of five. Treatment guidelines established for the treatment of congenital scoliosis in otherwise normal children applies equally well to those individuals with congenital spinal dysraphism, namely, early in situ arthrodesis for those curves showing progression with growth. A unique subset of individuals demonstrating congenital kyphosis at birth are best treated by neonatal kyphectomy and limited fusion, thereby correcting their deformity and enhancing their postnatal care.

The Influence of Femoral Derotation Osteotomy on Acetabular Maturation in Developmental Dysplasia of the Hip

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Early recognition in treatment of the hip with developmental dysplasia is successful in approximately 95% of cases with treatment with an abduction orthosis. With diagnostic delay the acetabulum may not develop properly leading to premature osteoarthritis in middle age. In order to determine the effect of femoral derotational osteotomy on acetabular maturation, a retrospective analysis of 46 patients with 54 hips was completed during the period 1977 to 1995 at Newington Children's Hospital. The indications for proximal femoral derotational osteotomy were recurrent subluxation or dislocation of the femoral head, persistent acetabular dysplasia with an acetabular index measuring greater than 25° and excessive femoral anteversion. Forty-eight of the 54 hips achieved normal status at an average of eight years follow-up. The critical time beyond which the acetabulum failed to respond well to proximal femoral realignment was 18 months. Cases requiring femoral osteotomy before age 18 months resulted in a 70% successful outcome, whereas those hips treated by femoral osteotomy beyond 18 months of age in 65% of cases required additional operative procedures on the acetabulum to provide normal further development of the hip joint.

Long-term Follow-up of the Surgical Treatment of Knee Dysfunction in Cerebral Palsy

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Ambulatory children with spastic cerebral palsy (CP) commonly demonstrate dysfunctional sagittal knee dynamics that may be characterized in four patterns: jump knee, crouch knee, stiff knee, and recurvatum knee.[1] Current orthopaedic surgical strategies directed to the first three types include the rectus femoris transfer/release[2] and intramuscular hamstring lengthening.[3] The efficacy of these surgical approaches have been documented through a number of clinical studies with follow-up of approximately one year after surgery.[4-7] The long-term effects of multiple concomitant orthopaedic procedures on the ambulatory status of these children is unknown, however. Consequently, the purpose of this study was to assess improvements in knee function resulting from multiple soft tissue procedures performed on patients with spastic cerebral palsy to evaluate the maintenance of these changes over a period of approximately five years. This work has been reported on briefly elsewhere.[8]

A total of 22 patients (35 lower extremities) with preoperative (P0) and postoperative (P1) gait analyses were identified and reanalyzed at five (±1) years after surgery (P2) using methods described by Davis et al.[9] All patients had a diagnosis of CP, seven with unilateral involvement and the remainder with bilateral involvement. Study patients had 141 surgical procedures, including 10 iliopsoas tenotomies, 30 rectus femoris transfer/releases, 32 hamstring lengthenings, and 31 lengthenings of the gastrocnemius muscle-tendon unit (Baker technique). The mean age of the patients at surgery was 10 (±5) years. All gait evaluations included the collection of clinical range of motion and strength, temporal and stride, and joint kinematic data. The group was evaluated as a whole and separated into two subgroups based on walking speed corrected by leg length, ie, one less than and the other greater than or equal to 1.12 cm/sec/cm. Differences in selected variables were evaluated using a repeated measures analysis of variance with a significance level set at $P<.05$.

In the clinical examination data, the only statistically significant change one year postoperatively was in static hamstring length (knee extension with hip flexion, popliteal angle), an improvement that was not maintained at five years. With respect to the temporal gait data, there were no significant differences among the three test periods. In the entire and slower walking groups, there were no significant changes in the kinematic gait data over the three test periods. In the faster walking group, however, there were statistically significant improvements in the following variables between P0 and P1 that were either maintained or improved upon at five-year follow-up (P2): knee extension at initial contact (28°±9° at P0 to 15°±8° at P1, 14° ±8° at P2), peak knee flexion during loading response (30° ±15° at P0 to 19°±15° at P1, 18°±10° at P2), and peak knee extension in stance (13°±15° at P0 to 4°±11° at P1, 1°±10° at P2). Although not statistically significant, the mean knee angle over the stance phase improved as well (24° ±12° at P0 to 13°±11° at P1, 11°±8° at P2). There was a significant reduction in peak knee flexion in swing at the five-year mark (65°±9° at P0, 62°±8° at P1 to 54°±6° at P2).

In general, the subjects demonstrated improved positioning of the knee at initial contact and reduced crouch in stance at five-year follow-up, in spite of a popliteal angle that showed only a short-term improvement. This suggests that popliteal angle is not well correlated with stance phase knee function. These results also demonstrate that faster and perhaps more functional walkers with spastic cerebral palsy are likely to demonstrate improvement in knee motion after a single stage multiple soft tissue surgery and to maintain most of these changes five years postoperatively.

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The Outcome of Tendon Transfers for Foot Deformities in Charcot-Marie-Tooth Disease: The Twenty-year Newington Experience

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Abstract: We reviewed the results of tendon transfers for 24 patients who had cavovarus foot deformities secondary to Charcot-Marie-Tooth disease. The patients' ages at presentation ranged from six to 31 years with an average age of 14 years. All of the patients had cavovarus foot deformities and all had tendon transfers, including 20 posterior tibial tendon transfers, three anterior tibial tendon transfers, and one extensor tendon transfer. The study includes all patients treated in this manner between 1974 and 1994. Twenty-one of the 24 patients were included in the final results. The three patients not included had a below-knee amputation secondary to osteomyelitis, reflex sympathetic dystrophy, and extensor tendon transfers for claw toes. The postoperative follow-up ranged from one to 21 years with a mean follow-up of eight years.

All deformities were categorized as flexible, partially flexible, and rigid according to results on clinical examination and the Coleman Block Test. Their clinical results were based on the system described by Levitt in 1973. Follow-up appraisal of the patients reveals 16/21 (76%) good to excellent results. Subjective evaluation was available for 17 patients. Thirteen of the 17 patients (76%) were ultimately satisfied with their results. Two patients of the 23, who had either anterior or posterior tibial tendon transfers, had major complications.

Treatment of Torsional Malalignment in Spastic Cerebral Palsy Patients with Ipsilateral Proximal Femoral and Supramalleolar Tibial Osteotomies: Results Using Gait Analysis

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Abstract—*Introduction:* The coexistence of increased femoral anteversion and external tibial torsion in spastic cerebral palsy patients produces an apparent valgus at the knee. Because it produces abnormal forces across the knee, it is often termed torsional malalignment. The purpose of this study was to assess improvements in gait via gait analysts in spastic cerebral palsy patients treated with ipsilateral femoral and tibial derotational osteotomies.

Methods: Fifteen spastic cerebral palsy patients who had concomitant ipsilateral proximal femoral derotational and supramalleolar internal tibial osteotomies and both pre- and postoperative gait analyses were identified. Indication for surgery in all patients was a deterioration in gait. Ten patients were diplegic, four quadriplegic, and one hemiplegic. In all patients, only one limb had both osteotomies. Appropriate soft tissue balancing was also performed in 14 of the cases. Average age at surgery was 11 years plus six years with a range from five years seven months to 18 years. Preoperative gait analysis was done an average six months prior in surgery. Postoperative gait analysis was performed an average 12 months postoperative. Overall follow-up averaged 36 months.

Results: Femora were operatively derotated an average 38° (range 30°-50°) and tibiae an average 33° (range 20°-50°). Significant ($P<.005$) changes were seen in the pre- to postoperative clinical data. Preoperative hip internal and external rotation averaged 66° and 22°, and postoperative 47° and 33°, respectively. Anteversion, as determined by clinical methods, decreased from an average 54° pre- to 23° postopeative. Thigh-foot axis deceased from 23° external preoperative to 8° external postoperative.

Significant ($P<.05$) changes were also seen in the pre- to postoperative gait analyses. Mean hip rotation in stance decreased from an average 14° (S.D. 12.2°) internal preoperative to a normal 3° (S.D. 10.1°) postoperative. Knee flexion angle at initial contact changed from an average

33° (S.D. 13.5°) preoperative to 22° (S.D. 13.8°) postoperative. Peak knee extension in stance decreased from 24° (S.D. 15.8°) preoperative to 14° (S.D. 15.6°) postoperative. Peak ankle dorsiflexion in terminal stance averaged 8° (S.D. 10.8°) preoperative and 17° (S.D. 6.5°) postoperative. No significant changes were seen in mean foot progression angle or pelvic motion. Walking speed was maintained (average 71 cm/s preoperative, 74 cm/s postoperative). There were no infections, hardware failures, nonunions, or neurovascular complications.

Conclusions: Concomitant ipsilateral proximal femoral derotational and suptamalleolar internal tibial osteotomies for the treatment of the torsionally malaligned lower extremity in the spastic cerebral palsy patient is a safe and directive procedure and produces more normal gait parameters.These results also suggest that changes made operatively in the transverse plane in conjunction with appropriate soft tissue balancing can have a significant impact upon gait changes seen in the coronal and sagittal planes as well.

We report for the first time, and with gait analysis, the use of ipsilateral femoral and tibial derotational osteotomies for the correction of the torsionally malaligned lower extremity in the spastic cerebral palsy patient.

Cotrel-Dubousset and Isola Spinal Instrumentations: A Comparison of Results in Adolescents with Idiopathic Scoliosis

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Abstract: In the last decade there has been a proliferation of various spinal implants to be used for correction of idiopathic scoliosis. As an outgrowth of the original Harrington rod, which consisted of a single rod with distraction hoods at either end, Yves Cotrel and John Dubousset evolved a system comprising multiple hooks which could be attached to two rods in various configurations to provide distractive and compressive forces to the spine holding the vertebral elements in a corrected position while the spinal fusion consolidates. Further design changes resulted in the Isola implant which combines rods, hooks, and sublaminar wires for the more effective translation of the apical vertebrae of the curve where by they can be drawn to the midline in a more physiologic saggital and coronal alignment. To analyze the proposed versatility, universal application, and the purported advantages of these systems, a retrospective analysis of 34 patients who underwent posterior spinal instrumentation for adolescent idiopathic scoliosis from 1989 to 1995 was performed.

Seventeen patients treated with Cotrel-Dubousset instrumentation (the first truly segmental spinal instrumentation) were compared with 17 patients treated with Isola instrumentation. The groups were similar in age, curve magnitude, flexibility, and type. Those patients treated with the Isola instrumentation demonstrated superior improvement in the percent of coronal correction of curves in both the thoracic and lumbar regions. This implant was also more effective in improving the translation of the apical vertebrae back to the mid-saggital plane of the spine. There was no significant difference in the operative time, estimated blood loss, nor in the cost of the implants.

Femora Vara: A Significant Component of Severe Infantile Genu Vara

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This is a retrospective review of 24 patients with 40 affected extremities treated for the diagnosis of infantile tibia vara or physiologic bowlegs between 1985-95. Based on the development of the distal femur, the patients were divided into two groups. Group A included patients who had abnormal distal femoral epiphyseal development while group B patients demonstrated normal distal femoral epiphyseal development. All patients had obtained full length lower extremity radiographs and were followed until clinical resolution or tibial osteotomy.

Of the 40 limbs in the study, 28 (70%) were assigned to group A and 12 (30%) were assigned to group B. Group A was associated with significantly younger average age at presentation (19 *vs* 32 months, $P<.005$). Based on presentation films, group A had a much lower average tibial metaphyseal diaphyseal angle (11° *vs* 17°, $P<.005$), higher average tibiofemoral angle (TFA) (37° *vs* 20°, $P<.005$), higher average lateral distal femoral angle (LDFA) (118° *vs* 93°, $P<.005$), lower average femoral metaphyseal epiphyseal angle (FMEA) (-8° *vs* 4°, $P<.005$), and lesser average Langenskiold stage (0-2 *vs* 2-3). In group A, 28/28 (100%) of patients had a LDFA >100°, and 26/28 (93%) had a negative (or apex medial) FMEA. In group B, 11/12 (92%) had a LDFA <100°, and 11/12 (92%) had a positive (or apex lateral) FMEA. In group A, a neutral TFA was reached between 30 and 40 months of age. In group A, 26 (93%) of 28 cases were successfully treated with bracing. All cases (12 of 12) in group B failed bracing and required surgical treatment.

We found that in most of the patients in our study, genu varum was more commonly due to varus in the femur rather than varus in the tibia. In these patients (group A), a more appropriate diagnosis would be femora vara. These patients with femora vara (group A) consistently exhibited specific abnormalities in ossification of the distal femoral epiphysis with predictable changes during correction, greater varus in the distal femur, less tibial involvement, and a much better response to brace therapy when compared to patients with true tibia vara (group B). Patients with femora vara have distinct differences from patients with physiologic bowlegs, specifically related to the severity of deformity and the timing of correction. These findings suggest that femora vara is a significant large subset of infantile genu vara with unique characteristics and a more favorable outcome than infantile tibia vara. Observations of the development of the distal femoral epiphysis and the use of the LDFA can assist in the differentiation of patients with femora vara from tibia vara and physiologic bowlegs.

Polio Scoliosis, Harrington, and Spinal Instrumentation: A Humanized Story of Epidemic Medicine and Therapeutic Methodology

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In the early 19th century, poliomyelitis emerged from its historical position as an endemic infection to an epidemic one. In retrospect this was at least partially the result of improving sanitary conditions to control bacterial enteric diseases. Although the infectious agent was determined to be viral in 1909 (Landsteiner), progress in understanding the pathophysiology of the disease was slow. No therapeutic method changed the course of the disease, but with the development of the iron lung (Drinker) beginning in 1929, survival of those requiring respiratory support during the acute phase of the illness became possible.

In 1947, Dr. Paul Harrington at only 36 years of age and after just two years in private practice following completion of his tour during World War II, became responsible for the polio unit at the Jefferson Davis Hospital in Houston. What started as a small unit soon expanded dramatically as the annual summer polio epidemic, beginning in 1948, recurred with increasing severity, leading to the development of the Southwestern Respiratory Care Center in 1951. Dissatisfied with conventional methods of managing these patients with spinal deformity, in 1949 Dr. Harrington began the development of his spinal instrumentation. Through dogged persistence over the next 11 years he was able to develop the first successful spinal implant system.

Concurrently, progress leading to the prevention of poliomyelitis was finally being made. Some key steps (with approximate dates) were recognition of enteric transmission (1939), virus typing by the Committee on Typing of the National Foundation of Infantile Paralysis (1948-1953), successful tissue culture (Enders et al, 1949), and proof of viremia (Horstman, 1951). This all led to the development of effective killed-virus vaccine (Salk 1955) and attenuated live oral vaccine (Sabin, 1957-62), leading to eventual elimination of the disease in the United States and many other parts of the world.

Originally developed for postpolio scoliosis, the Harrington instrumentation system was found useful for a variety of spinal disorders. However, Dr. Harrington's dream of instrumentation without fusion allowing for growth correction of the spinal deformity and eventual implant removal was not realized. To be successful, fusion was required. From 1961 through 1968 Dr. Harrington

standardized and taught his surgical techniques throughout the world. His academic studies included operative case data banking, biomechanics, experimental scoliosis, spondylolisthesis reduction with and without pedicle screws, and fracture management. Even after his death in 1980, his instrumentation continued to be the most commonly used throughout the world until 1985, 25 years after its introduction.

Although several modifications of the Harrington instrumentation occurred in the 1960s, most came in the 1970s. These included the square-shouldered rod for rotational control in about 1974 (Moe et al) and addition of sublaminar wires and dual rods in about 1976 (Luque). The current phase of implant development began in 1983-84 with the introduction of three-dimensional instrumentation concepts by Cotrel and Dubousset. This has been further enhanced by the development of pedicle screws by Roy-Camille (1962 and on) and Steffee (1983 and on). As the evolution of spine instrumentation occurs, Dr. Harrington's longtime hope that the new science of molecular medicine would make management of spinal deformity without fusion a reality.

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Losartan (Cozaar®)

SANDRA BALDINGER, Pharm.D.

Introduction

IN the spring of 1995, the FDA approved losartan potassium for the treatment of mild to moderate hypertension. Losartan is the first of a new class of drugs, the angiotensin II receptor antagonists. Despite the wide variety of antihypertensive agents currently available, losartan has a unique mechanism of action and represents an alternative treatment option for patients with mild to moderate hypertension.

Pathophysiology

The renin-angiotensin system plays a major role in regulating blood pressure and fluid and electrolyte balance.[1,2] Renin is released in response to physiologic factors such as low renal perfusion, hyponatremia, decreased circulating blood volume, increased sympathetic activity, and alterations in electrolytes. Angiotensinogen is converted to angiotensin I by renin and this conversion is the rate limiting step in this system. Angiotensin I is then cleaved by angiotensin converting enzyme (ACE) to angiotensin II (AII). This step is blocked by angiotensin converting enzyme inhibitors (ACEI). Angiotensin II evokes several physiologic responses that include 1) aldosterone release, 2) sodium reabsorption, 3) an increase in intravascular volume, and 4) a feedback mechanism inhibiting renin release. As a result of its physiologic effects, angiotensin II is a potent vasoconstrictor that can increase blood pressure. Angiotensin II receptor antagonism has been shown significantly to reduce blood pressure.[1,2]

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Mechanism of Action

Losartan selectively blocks the binding of angiotensin II to the angiotensin II receptor, type AT_1, found in many tissues including vascular smooth muscle, adrenal gland, kidney, uterus, brain and heart.[2] Losartan does not inhibit ACE or degrade bradykinin. Antagonism of the AT_1 receptor blocks the vasoconstrictor and aldosterone-secreting effects of angiotensin II.[1,2,3]

Pharmacokinetics

Losartan has an oral bioavailability of approximately 33%. It undergoes extensive first-pass metabolism by cytochrome P450*. Fourteen percent of losartan is hepatically metabolized to an active carboxylic metabolite which is a more potent antagonist of AII receptors than losartan.[2,3] Mean peak plasma concentrations of losartan and its active metabolite are reached in one hour and three to four hours, respectively. Both losartan and its active metabolite are highly bound to plasma proteins, primarily albumin. Losartan has a half-life of two hours and its metabolite is six to nine hours. After oral administration of losartan, approximately 4% of the dose is excreted unchanged in the urine and about 6% is excreted in the urine as the active metabolite. Biliary excretion also contributes to the elimination of losartan and its metabolites.[3]

Clinical Trials

Gradman et al conducted a randomized, double-blind, parallel study to compare the antihypertensive effects of various doses of losartan with enalapril and placebo. Five hundred seventy-six patients with mild to moderate hypertension were randomized to receive once-daily treatment of either losartan (10, 25, 50, 100, or 150mg), enalapril maleate (20mg), or placebo for eight weeks. Mean reductions in supine systolic/diastolic blood pressure (SBP/DBP) are listed in Table 1.[4]

*enzyme system that breaks down the drugs in the liver

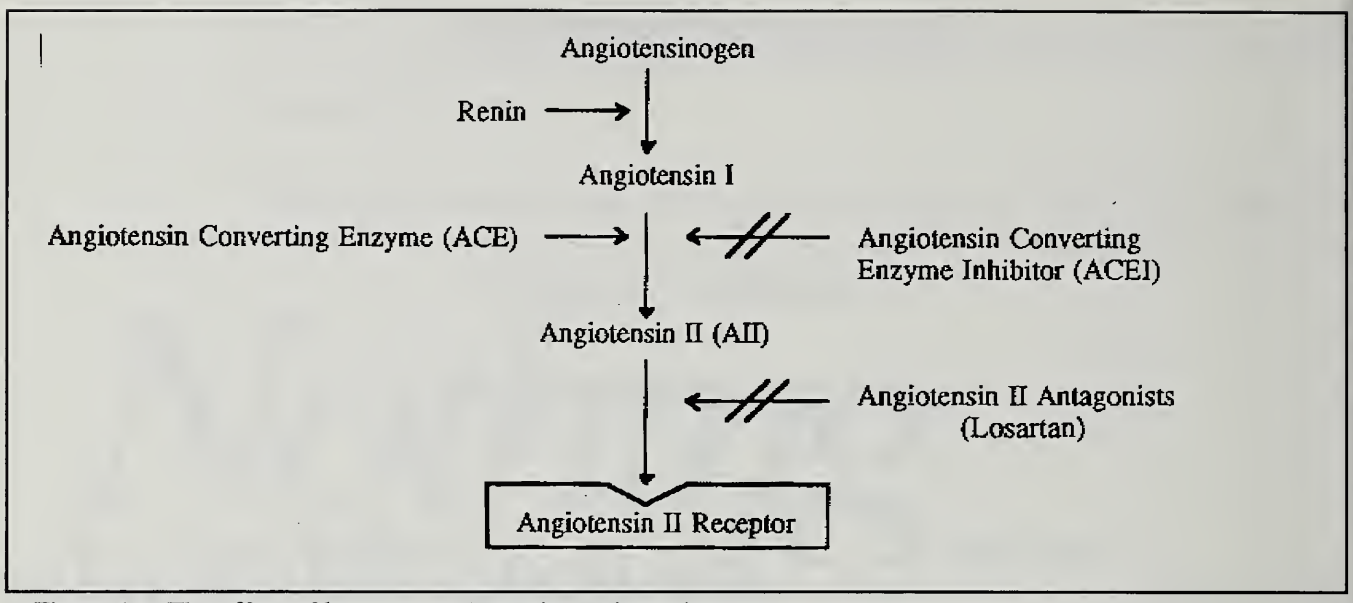

Figure 1.—The effect of losartan on the renin-angiotensin system

The authors concluded that losartan (50 to 150 mg) once daily significantly reduced systolic and diastolic blood pressures as compared to placebo. These reductions were not significantly different from those seen with enalapril.[4] The efficacy and tolerability of losartan as compared to atenolol, a selective beta-blocker, in 202 patients with mild to moderate essential hypertension was evaluated in a multinational, prospective, randomized, 12-week double-blind parallel study by Dahlof et al. During the first six weeks, 134 patients received losartan and 68 patients received atenolol, 50mg once daily. After the first six weeks, patients with a DBP ≥90 mmHg were titrated to receive 100mg once daily. Sixty-three percent of patients in the losartan group were titrated to receive 100mg daily versus 59% in the atenolol group. Reductions in sitting diastolic blood pressure were not statistically different between the two groups (Table 2). The authors concluded that losartan was as efficacious as atenolol for reducing blood pressure.[5]

Grossman and colleagues evaluated the long-term hemodynamic and humoral effects of losartan in 15 patients with essential hypertension. The study was divided into a placebo phase and two active treatment phases. In the first phase, patients received a placebo for two weeks followed by losartan 50mg once daily for four weeks. The second treatment phase took place over the next 11 months and the patients continued losartan 50mg once daily (DBP ≤ 90 mmHg). If DBP was >90 mmHg, the patients also received hydrochlorothiazide (HCTZ) and, if necessary, nifedipine was added. The changes in blood pressure, mean arterial pressure, heart rate, plasma renin activity (PRA), and aldosterone levels after the two treatment

Table 1.

Treatment	N	Mean Decrease in Supine SBP/DBP (mmHg)	*P* Value *vs* Placebo*	*P* Value *vs* Enalapril
Losartan 10mg	80	7.6/7.9	†:NS /*P*≤.05	*P*≤.01
Losanan 25mg	82	7.8/6.8	*P*≤.05 / NS	*P*≤.01
Losartan 50mg	79	13.0/10.1	*P*≤.01	NS
Losartan 100mg	90	8.9/9.9	*P*≤.01	*P*≤.01 / NS
Losartan 150mg	84	10.5/9.7	*P*≤.01	*P*≤.05 / NS
Enalapnl 20mg	83	14.7/11.2	*P*≤.01	
Placebo	78	3.8/5.6		*P*≤.01

*Where one *P* value is listed, it applies to both SBP and DBP
†Not statistically significant

Table 2.		
	Mean Change in SBP/DBP (mm Hg)	
	6 weeks	12 weeks
Losartan	11.8/9.0	11.4/8.6 1
Atenolol	12.4/11.0	11.9/10.6 1

quired losartan, HCTZ, and nifedipine. At the end of both treatment phases plasma levels of creatinine, potassium, uric acid, cholesterol, and norepinephrine remained unchanged. At the end of one month, plasma aldosterone decreased and then returned to baseline levels at 12 months. Renin activity increased after one month and remained elevated after 12 months. The authors concluded that losartan is a safe and effective antihypertensive agent and may be more effective in patients with high renin hypertension.[6]

Table 3.					
	Baseline	1 Month	*P* value *vs* Baseline	12 Months	*P* value *vs* 1 Month
Systolic blood pressure (mmHg)	153±3	145±4	*P*<.05	133±3	*P*<.05
Diastolic blood pressure (mmHg)	102±1	97±1	*P*<.05	89±2	*P*<.05
Mecml arterial pressure (mmHg)	119±2	113±2	*P*<.05	103±2	*P*<.05
Heart rate (beats/minute)	74±2	70±2	*P*<.05	66±2	NS
Plasma renin activity (ng/mL/hr)	0.59±0.11	1.18±0.27	*P*<.05	2.52±0.58	*P*<.05
Plasma aldosterone (ng/dL)	21.4±2.6	17.8±2.8	*P*<.05	21.3±3.8	NS

Table 4.		
Adverse Effects	Losartan (n=1,075) Incidence (%)	Placebo (n=334) Incidence (%)
Digestive		
diarrhea	2.4	2.1
dyspepsia	1.3	1.2
Musculoskeletal		
cramp, muscle	1.1	0.3
myalgia	1.0	0.9
back pain	1.8	1.2
leg pain	1.0	0.0
Nervous System/Psychiatric		
dizziness	3.5	2.1
insomnia	1.4	0.6
Respiratory		
nasal congestion	2.0	1.2
cough	3.4	3.3
upper respiratory infection	7.9	6.9
sinus disorder	1.5	1.2
sinusitis	1.0	0.3

phases are listed in Table 3. Only 10 patients completed the second treatment phase, of whom two received only losartan, six received losartan plus HCTZ, and two re-

Indications

Losartan is indicated for the treatment of hypertension, either as monotherapy or in combination with other antihypertensive agents. Clinical trials are underway to evaluate its potential usefulness in the treatment of congestive cardiac failure and renal disease.

Adverse Effects

The most common adverse effects of losartan are summarized in Table 4. These are based on four 6-12 week placebo controlled trials involving over 1,000 patients who received losartan (10-150mg) and over 300 patients who received placebo. None of the adverse effects appeared to be dose-related. Adverse events occurring in at least 1% of patients treated with losartan that were more frequent with losartan *vs* placebo are listed in Table 4.[3]

More recently, a report by Goldberg et al[7] summarized the safety and tolerability of losartan in approximately 2,900 patients with hypertension from 16 double-blind trials. The results are similar to the findings shown in Table 4. The most frequently reported adverse events in patients who received losartan as monotherapy were headache (14.1%), upper respiratory infection (6.5%), dizziness (4.1%), asthenia/fatigue (3.8%), and cough (3.1%). The most frequent adverse events that the investigator considered as "drug-related" were headache (4.2%), dizziness (2.4%), and asthenia/fatigue (2.0%).[7]

Dosage and Administration

Losartan is currently available in 25 and 50mg tablets. The usual starting dose of losartan is 50mg once daily, irrespective of meals. It can be administered once or twice daily with doses ranging from 25 to 100mg per day. Patients with intravascular volume depletion (ie, those treated with diuretics) or those with a history of hepatic impairment should receive a starting dose of 25mg once daily. Dosage adjustment is not necessary for patients with renal impairment and the elderly.

Cost

The cost for a variety of ACE inhibitors as compared to losartan is listed in Table 5.

Table 5.

Drug	Dose*	Cost*
Bellazepril (Lotensin®)	20mg po QD	$19.20
Captopril (Capoten®)	25mg po TID	$65.70
Enalapril (Vasotec®)	20mg po QD	$60.00
Fosinopril (Monopril®)	20mg po QD	$21.90
Losartall (Cozaar®)	50mg po QD	$33.00

*The wholesale price (AWP) for a 30-day supply of medication at the doses listed above

Place In Therapy

It is unclear whether or not certain patient populations (ie, those with high renin hypertension) may benefit more from losartan as compared to other available antihypertensive agents. Patients who develop ACE inhibitor-induced cough can receive losartan and are less likely to develop a cough.[2] Until more information becomes available, losartan should be used in patients who have failed other antihypertensive agents, can not tolerate an ACE inhibitor, or require combination antihypertensive therapy.

Conclusion

Losartan is the first available angiotensin II receptor antagonist. It is currently approved for the treatment of mild to moderate hypertension. It has a unique mechanism of action and is an appealing antihypertensive treatment option. Losartan has been shown in clinical trials to be more effective than placebo in patients with mild to moderate hypertension. It appears to be as effective as other commonly used antihypertensive agents. It seems to be well tolerated with the most common drug-related adverse events being headache, dizziness and asthenia/fatigue. In addition, it can be administered safely with other antihypertensive agents for patients requiring more than one agent. As more information becomes available losartan's potential place in therapy for hypertension and other disease states will be further determined.

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Human Rabies—Connecticut, 1995

ON October 3, 1995, a 13-year-old girl who resided in Greenwich, Connecticut, died from rabies virus infection. This was the first case of human rabies reported in a Connecticut resident since 1932. This report summarizes the investigation of this case, which indicated a bat as the probable source of her exposure.

On September 18, the patient reported general fatigue, stiffness, tremors, and tingling in her left arm and hand. On September 22, she visited a local emergency department because of pain and tingling in her left arm and shoulder and a low-grade fever. Cervical radiculopathy was presumptively diagnosed and was attributed to her habit of carrying a heavy backpack; ibuprofen was prescribed. She was given a cervical collar and referred to a pediatric neurologist.

On September 25, because of continuing symptoms, she was evaluated by her pediatrician, who noted sensory changes on the left arm and face. She was again referred to a pediatric neurologist and, later that day, was admitted to a hospital because of complaints of fever, neck pain, and painful sensations along her left arm and left side of her face. On physical examination, her temperature was 100.0 F (37.8 C), and she was alert but anxious; there was moderate nuchal rigidity. The only abnormal neurologic finding was deviation of the uvula to the left. Laboratory findings included a peripheral white blood cell (WBC) count of 13,600/mm3 (normal: 5000-10,000/mm3) with 86% neutrophils, 10% lymphocytes, and 4% monocytes. Her cerebrospinal fluid (CSF) contained 2 red blood cells/mm3 (normal: 0/mm3) and 100 WBCs/mm3 (normal: 0-5/mm3) with 48% neutrophils, 40% lymphocytes, and 12% monocytes, total protein of 104 mg/dL (normal: <40 mg/dL), and glucose level of 53 mg/dL; serum glucose was 102 mg/dL (normal: 70-110 mg/dL).

The diagnosis on admission was possible Lyme meningoencephalitis with peripheral nerve involvement; treatment was initiated with intravenous ceftriaxone and dexamethasone. During the 24 hours following admission, she became intermittently drowsy then agitated, and occasionally was disoriented. Subsequent manifestations included deviation of her tongue to the right, anisocoria, and progressive weakness of the left arm. She also was observed to be apprehensive and had difficulty swallowing, accompanied by a prominent aversion to oral intake. Severe pharyngeal spasms were elicited by offering a drink of water. The diagnosis of rabies was considered, and the patient was placed in isolation. She became increasingly agitated; although she experienced tactile hallucinations (i.e., complaining of a sensation of insects in her mouth), she intermittently was lucid and self-reflective and apologized for her mood and hallucinations.

On September 26, the girl was transferred to the intensive-care unit, where she was intubated because of progressive bulbar dysfunction. Beginning September 27, she became progressively less responsive, and subsequently lapsed into a coma. On October 3, mechanical ventilation was withdrawn, and the patient died. No autopsy was performed.

Rabies was diagnosed on October 2 at the New York State Rabies Laboratory based on corneal impressions collected on October 1, which were positive for rabies virus by immunofluorescence, and based on rising rabies virus neutralizing antibody titers of 1:32, 1:64, and 1:512 in serum samples collected on September 25, 29, and October 2, respectively. The diagnosis was confirmed at

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CDC through extraction of RNA from saliva and corneal epithelia, which was reverse transcribed with rabies-specific primers and amplified using the polymerase chain reaction (PCR) assay. Nucleotide sequencing of the PCR products at CDC characterized the rabies virus as a variant associated with the silver-haired bat, Lasionyoterus noctivagans.

The girl lived in a single-family dwelling in a wooded residential area in Greenwich. Although she denied a history of animal bites, multiple potential sources of animal contact were present in the home and surrounding environment; domestic animals with which she was known to have had contact were accounted for and were well. Following the diagnosis of rabies, the girl's mother and three siblings recalled that on approximately August 19, a bat flying inside the house struck at least one person; during this time, the girl was asleep in an upstairs bedroom. Inspection of the house and surrounding property by the Greenwich Department of Health on September 29 did not identify dead animals or evidence of bats.

Because of possible percutaneous or mucous membrane contact with the girl's secretions during September 10-October 3, rabies postexposure prophylaxis was administered to 83 persons who reported probable contact with the patient's saliva: 46 health-care workers, 29 children, four family members, three family friends intimately involved in the girl's care, and one other adult.

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Editorial Note: Since the 1950s, bats have accounted for an increasing proportion of variants of rabies virus transmitted from wildlife reservoirs to humans. The rabies virus variant identified in this case, and in a case in New York in 1993,[1] is associated with the silver-haired bat, a solitary, migratory species with a preferred habitat of oldgrowth forest. However, in neither of these cases was a clear history of bite exposure to a bat or any other animal established. Of the 28 cases of human rabies diagnosed in the United States since 1980, this case was the 15th to be associated with bats; 10 of the virus variants obtained from these 15 persons have been characterized as a silver-haired bat variant.

Bat rabies is enzootic in the United States, and cases have been reported from all 48 contiguous states.[1] In Connecticut, of the 671 bats submitted to the state laboratory for testing during 1991-1995, a total of 47 (7%) were positive for rabies. Nine of the bats diagnosed with rabies in Connecticut during 1995 were sent to CDC for viral typing. Eight of the bats were infected with a variant associated with the common big brown bat (*Eptesicus fuscus*) and one bat was infected with a rabies virus variant associated with red bats (*Lasiurus borealis*). None of the bats were identified by species. In New York state, of the 6810 bats submitted to the state laboratory for rabies testing during 1988-1992, a total of 312 (4.6%) were positive for rabies; of these, approximately 90% were from *E. fuscus*. Only 25 of the submitted bats were silverhaired bats, of which only two were positive for rabies virus.[2]

The findings of the investigation of a recent case in Washington suggest that even apparently limited contact with rabid bats may be associated with rabies transmission.[3] Because bites from bats may be very small, an exposure may not be recognized—particularly when an unattended child may not be able to accurately relate events to an adult.

The case described in this report and reports of similar cases[1,3,4] underscore the national recommendation that, in situations in which a bat is physically present and the person(s) cannot reasonably exclude the possibility of a bite exposure, postexposure prophylaxis should be given unless prompt capture and testing of the bat has excluded rabies virus infection.

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Rabies Postexposure Prophylaxis—Connecticut, 1990-1994

In Connecticut, the first case of animal rabies associated with the ongoing raccoon rabies epizootic was identified in March 1991; since then, cases of animal rabies have been confirmed in all eight counties of the state. Because of heightened awareness of the potential for rabies and the nearly always fatal outcome of this disease, the numbers of persons in Connecticut receiving rabies postexposure prophylaxis (PEP) was suspected to have increased substantially during 1990-1994. In Connecticut, PEP is administered with pharmaceuticals obtained through retail channels. In 1994, the Connecticut Department of Public Health surveyed Connecticut hospitals and the two pharmaceutical manufacturers that produce human rabies immunoglobulin (HRIG) to estimate the number of persons receiving PEP during 1990-1994* and the costs associated with treatment. This report summarizes the survey findings, which suggest an increasing trend in the administration of PEP in Connecticut corresponding with the statewide spread of raccoon rabies.

In October 1994, a questionnaire was mailed to the pharmacy director at each of the 33 acute-care hospitals in Connecticut. The questionnaire asked about rabies vaccine and HRIG, including the number of vials used each year during 1990-1994 and the amount charged for each vial. Questionnaires were returned from 32 (97%) of the 33 hospitals. Because of limitations in the maintenance of inventory records, only nine to 15 (28%-47%) hospitals were able to provide information about the amount of HRIG used for any period before 1994.

At the time of the survey, all 32 hospitals reported stocking vaccine, and 31 (97%) also stocked HRIG. Charges to patients for these products varied widely (Table 1). In 1994, the median estimated cost for HRIG and rabies vaccine for a person weighing 165 lbs (i., 10 mL HRIG and five vaccine doses) was $1,498 (range: $787-$4,548) and for a child weighing 33 lbs (ie, 2 mL HRIG and five vaccine doses) was $1,127 ($481-$3,371).

Because most hospital pharmacies do not monitor the number of patients who receive rabies PEP, the amount of HRIG dispensed by the hospital pharmacies was used as a surrogate measure of the number of treatments initiated. During 1990-1993, the mean number of milliliters used by each hospital annually (based on nine to 15 hospitals each year) increased from 10 mL to 203 mL (Table 2). Because most hospitals also do not monitor the characteristics (eg, age and weight) of persons who receive rabies PEP, the average volume of HRIG administered to each patient was estimated to be 8 mL—a dosage appropriate for a 132-lb person. To estimate the total number of doses of HRIG administered, the mean number of milliliters dispensed was divided by 8 mL. Based on these data, the estimated number of persons treated at Connecticut hospitals increased from 41 in 1990 to 887 during the first nine months of 1994 (Table 2).

Complete sales data for HRIG sold in Connecticut were available from both manufacturers only for 1993. HRIG sufficient for an estimated 1879 doses (based on an 8-mL dose per patient) was sold to Connecticut health-care providers. Based on these data, in 1993, PEP was administered to 1879 persons in Connecticut.

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*For 1994, data were reported for January-September.

Table 1.—Hospital charges for human rabies immunoglobulin (HRIG), rabies vaccine, and postexposure prophylaxis* (PEP), by product—Connecticut,1994

Product	No. hospitals reporting (n=32)	Hospital charge to patient Median	(Range)
Rabies vaccine	19	$ 189	($ 80-$ 594)
HRIG			
2 mL	17	$ 136	($ 67-$ 400)
10 mL	17	$ 504	($268-$1,577)
PEP			
For persons weighing 33 lbs†	14	$1,127	($481-$3,371)
For persons weighing 132 lbs§	16	$1,430	($709-$4,233)
For persons weighing 165 lbs¶	16	$1,498	($787-$4,548)

*PEP consists of doses of rabies vaccine and HRIG based on the patient's weight.
†2 mL HRIG and five vaccine doses.
§8 mL HRIG and five vaccine doses.
¶10 mL HRIG and five vaccine doses.

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Editorial Note: Since the 1950s, cases of human rabies in the United States have steadily declined. During 1980-1995, only 18 indigenously acquired cases occurred, and no human deaths were attributed to the raccoon rabies virus variant associated with the epizootic.[1-3] In Connecticut, a bat-associated case in 1995 was the first human case to be reported since 1932.[4] The decline in human rabies cases, in part, reflects the availability of an effective treatment for humans following exposure to a rabid animal and widespread use of canine rabies vaccination. The Advisory Committee on Immunization Practices (ACIP) periodically revises recommendations to guide decisions regarding treatment following exposure.[5] Adherence to these guidelines should reduce the number of unnecessary administrations of PEP, associated costs, and potential risks for adverse reactions.

The findings in this report are subject to at least three limitations. First, because data from the hospital pharmacies for 1990-1993 were incomplete, the findings for those

Table 2.—Number of milliliters of human rabies immunoglobulin (HRIG) dispensed at hospitals and estimated total doses administered,* by year—Connecticut, 1990-1994†

Year	No. hospitals reporting (n=32)	HRIG dispensed per hospital (mL) Mean	(Range)	Total HRIG dispensed (mL)	Estimated total doses administered
1990	9	10	(0- 36)	90	41
1991	9	63	(0-343)	565	260
1992	11	163	(12-470)	1,790	672
1993	15	203	(10-490)	3,050	837
1994§	28	215	(26-548)	6,016	887

*Because most hospitals do not monitor the characteristics (eg, age and weight) of persons who receive rabies postexposure prophylaxis, the average volume of HRIG administered to each patient was estimated to be 8 mL—a dosage appropriate for a 132-lb person. To estimate the total number of doses of HRIG administered, the mean number of milliliters dispensed was divided by 8 mL.
†Because most hospital pharmacies do not monitor the number of patients who receive rabies postexposure prophylaxis, the amount of HRIG dispensed by the hospital pharmacies was used as a surrogate measure of the number of treatments initiated.
§Reported for January-September.

years may not be respresentative of all hospital pharmacies in Connecticut. Second, the amount of HRIG dispensed by hospital pharmacies was used as a surrogate measure of the number of treatments administered and did not account for unused HRIG; therefore, these findings may overestimate the number of persons receiving rabies PEP in Connecticut. Third, because of the use of an estimate for the average bodyweight of persons receiving rabies PEP in Connecticut, the estimate of PEP usage may not be precise.

Despite limitations in the precision of the estimates of the number of administrations of rabies PEP in Connecticut, estimates such as those presented in this report are one important measure of the cost associated with rabies prevention. PEP usage also may reflect changes in the epizootiology of rabies in specific areas, as illustrated by the increased numbers of persons who received PEP in areas affected by raccoon rabies.[6]

The findings in this report indicate an increasing trend in the administration of rabies PEP that corresponded with the statewide spread of racoon rabies in Connecticut. Similarly, administration of PEP increased in two counties in New Jersey during 1988-1990 and in New York state during 1992-1993 as the raccoon rabies epizootic progressed in those states.[6,7]

One of the national health objectives for the year 2000 is to reduce the number of rabies PEP administrations in the United States to no more than 9,000 per year (objective 20.12).[8] Although national PEP usage has not been estimated since 1980-1981, the findings in Connecticut and other states[6,7] suggest this objective is unlikely to be achieved.

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The Patient–Physician Covenant: An Affirmation of Asklepios

CHRISTINE K. CASSEL, M.D.

The Patient-Physician Covenant

Medicine is, at its center, a moral enterprise grounded in a covenant of trust. This covenant obliges physicians to be competent and to use their competence in the patient's best interests. Physicians, therefore, are both intellectually and morally obliged to act as advocates for the sick wherever their welfare is threatened and for their health at all times.

Today, this covenant of trust is significantly threatened. From within, there is growing legitimation of the physician's materialistic self-interest; from without, for-profit forces press the physician into the role of commercial agent to enhance the profitability of health care organizations. Such distortions of the physician's responsibility degrade the physician-patient relationship that is the central element and structure of clinical care. To capitulate to these alterations of the trust relationship is to significantly alter the physician's role as healer, carer helper, and advocate for the sick and for the health of all.

By its traditions and very nature, medicine is a special kind of human activity—one that cannot be pursued effectively without the virtues of humility, honesty, intellectual integrity, compassion, and effacement of excessive self-interest. These traits mark physicians as members of a moral community dedicated to something other than its own self-interest.

Our first obligation must be to serve the good of those persons who seek our help and trust us to provide it. Physicians, as physicians, are not, and must never be, commercial entrepreneurs, gateclosers, or agents of fiscal policy that runs counter to our trust. Any defection from primacy of the patient's well-being places the patient at risk by treatment that may compromise quality of or access to medical care.

We believe the medical profession must reaffirm the primacy of its obligation to the patient through national, state, and local professional societies; our academic, research, and hospital organizations; and especially through personal behavior. As advocates for the promotion of health and support of the sick, we are called upon to discuss, defend, and promulgate medical care by every ethical means available. Only by caring and advocating for the patient can the integrity of our profession be affirmed. Thus we honor our covenant of trust with patients.

THE Patient-Physician Covenant," published in the 17 May 1995 issue of *The Journal of the American Medical Association*[1] and reprinted here, has been crafted in discussions among the cosignatories during the last five years. We, the cosignatories, came together out of shared concern, but from different perspectives in the practice of medicine, because we saw increasing anxiety among physicians in response to changes in the structure and practice of medicine, changes that are perceived as a threat to the fundamental values of the profession. Simply stated, the perceived threat is to the sacred responsibility of physician to patient. The Covenant was crafted as a call to renew medicine's commitment to the core mission of concern for the sick and thus to maintain the soul of the medical profession.

This may seem like a strong statement, and it is—for good reasons. These threats to the profession are great enough that such clear and unambiguous language is needed. Bailey's analysis, "Asklepios: Ancient Healer of

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Medical Caring," in a recent issue of this journal[2] exactly identifies the core value that the Covenant affirms: the fiduciary ("founded in trust") responsibility of the physician to the patient. Bailey also—and interestingly enough, given the 3,000 years since Asklepios practiced—identifies in ancient times the same threat that confronts us today: pecuniary inducements to put self-interest before the values of the profession.

Much of the discussion among physicians about the current tumultuous changes in the environment of medical practice relates to the increasing penetration of managed care. Medical gatherings abound with complaints about the bureaucratic intrusions into the physician-patient relationship and the pressure on physicians—in some cases, in the form of direct financial incentives—to withhold indicated diagnostic or therapeutic measures to keep costs down.

The Covenant does not oppose managed care. Physicians do share with the rest of society the challenging responsibility to make health care affordable for all. Current trends are toward increasing numbers of uninsured persons, decreasing eligibility for Medicaid, and increasing beneficiary costs for Medicare. All of these lead to decreasing rather than increasing access to health care. More responsible cost containment could lead to broader access, and managed care, if done openly and with maximal concern for patient welfare, can actually improve collaboration among specialists and primary care physicians, leading to rational clinical decisions based on cost-effectiveness.[3]

Managed care is not the problem; profit is the problem. Before the days of widespread health insurance, physicians such as William Carlos Williams dealt daily with patients who could not afford medical treatments. Their only source of reimbursement was out-of-pocket payment. Williams used restraint when ordering diagnostic tests, hospitalization, and other interventions because of the limited resources of his patients. In these difficult decisions, which are chronicled so poignantly in *The Doctor Stories,*[4] it is clear that Williams' concern is caring for patients, not enhancing profits for himself or for shareholders investing in a profit-making corporation. This is where the real challenge to the soul of the profession is being engaged.

The Covenant is now being circulated among medical societies, who are being asked to endorse it. It has recently been endorsed by the American College of Physicians, the American Board of Internal Medicine, and numerous other societies. Why ask professional societies to affirm this document? Precisely because self-regulation is considered a defining feature of a profession.[5] Professionalism requires enough independence to sustain intrinsic moral values and to represent those values to society.[6]

Organized medicine has responded to these threats from the changing environment in health care in many ways. One of the major responses has been to urge physicians to take control of the business of health care. This measure may provide some protection for the patient, because physicians are more knowledgeable about the clinical implications of various cost-containment strategies, but it is not enough to protect the soul of the medical profession. Accepting the "business" paradigm, especially in a profit-centered corporate setting, turns the physician away from concern for the patient and toward concern for the bottom line.[7] More than nine billion dollars were generated as profits in health care in 1995; this is money that is unavailable for medical needs at a time when policymakers solemnly agree that we "can't afford" universal access to health care.

Physician control addresses only one characteristic of a profession: autonomy. The other characteristics of the profession of medicine, outlined by social scientists as well as ethicists,[8] include the physician's clear responsibility to advocate for the sick and the most vulnerable, to put the patient's welfare before his or her own, and to be accountable to the public, from whom professional prestige derives. None of these latter characteristics are inherent or indeed even visible in the modern corporate structure of health care. The Asklepian motive has disappeared when health plans consider themselves to be like supermarket chains. The supermarket has no explicit or corporate responsibility to provide food for someone who is hungry but cannot afford to pay. The corporate business model in health care behaves the same way, so that growing numbers of uninsured and underinsured people will have nowhere to go once market forces have taken over. What, then, is the responsibility of the profession that traces its roots to Asklepios? This is the moral question that faces us so starkly.

Responsible physicians must consider the prudent use of health care resources because of their accountability to society and their awareness that health care access for all depends on a considered containment of cost. Corporate motives do not include the return of savings to enhance access to the underserved. On the contrary, the rise of corporate health care has paralleled an increase in the number of uninsured Americans.[8] The most successful of the corporate medical models now considers a 70% medical loss ratio to be a successful target. This means that 30% of the dollars put into the health care system go not to the provision of health care but to private gain.

What is the message for the physician? There are billions of dollars to be made, and that temptation is difficult to resist. Like Asklepios, modern physicians must be either physicians or profiteers; they cannot have it both ways. As described by Plato,[2] "If he was the son of

God, he was not avaricious ... and if he was greedy of gain he was not the son of a God." Modern physicians no longer consider themselves gods, but the conflict between the sacred trust of the patient-physician relationship and the destructive force of greed remains as clear as it was in the days of the ancient Greeks. Many young persons are attracted to medicine because it promises meaning, a transcendent significance to the activities of healing that goes beyond the need to make a living. This is more than a job, physicians often still say. It is a way to help people, to contribute to the improvement of the human condition. Families or patients who have had a "good doctor" will affirm the human significance of that relationship, especially if they have faced serious illnesses. Although the physician's role in the lives of patients may not be godlike or divine, at its best it can and ultimately does have spiritual dimensions. Like the clergy, medicine requires public accountability. The trust of the patient and the public may be irreparably damaged if personal gain and corporate profit become primary concerns. Zeus struck Asklepios with a thunderbolt because the healer agreed to use his talents to raise someone from death for the promise of gold. Zeus was angered because the physician infringed on the territory of the gods and did so because of the lure of riches rather than his vows to serve humanity.

Are physicians in the United States vulnerable to this same thunderbolt? Clearly, yes. Is all lost? Not yet. We must understand that we have a responsibility to use medical resources wisely precisely because health care is a public good. As our power to heal grows, the cost of care increases, thus increasing the importance of prudent purchasing. But the reason to contain cost must be to grant expanded access to the vulnerable and the needy and not to enrich ourselves or investors.

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Hartford Health Care Corporation and University of Connecticut Health Center Announce Collaborative Strategic Alliance

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The Board of Directors of the Hartford Health Care Corporation and the Board of Trustees of the University of Connecticut have approved a Memorandum of Understanding (MOU) establishing a Strategic Alliance between the Hartford Health Care Corporation (HHCC) and the University of Connecticut Health Center (UCHC).

According to John Meehan, chief executive officer and president of the HHCC, the parent company of Hartford Hospital, and Leslie Cutler, D.D.S., Ph.D., chancellor and provost for health affairs and president of the University of Connecticut Health System, the alliance will serve as the basis for the eventual creation of a fully-integrated statewide system that will provide world-class, cost-effective health care to Connecticut's residents.

Additionally, the alliance will offer medical and dental students and residents the opportunity to train in a variety of settings and will lead to increased opportunities for both institutions to participate in cutting-edge clinical research. The alliance will also facilitate integration of clinical services, collaboration on research and educational programs, and enhance efficiencies by joint planning. The alliance places Hartford Hospital as the Health Center's primary educational partner for the future.

Although each institution will retain individual and corporate responsibilities, the two will immediately begin studying ways in which they can integrate their academic, research, and clinical programs.

"We've collaborated with the Health Center in many ways and on many levels over the years," Meehan said. "This is an outgrowth of that collaboration. By forming this alliance, we will be stronger both individually and collectively. this alliance is consistent with our strategic plan, which is the development of a totally integrated delivery system emphasizing patient care and teaching."

By combining UCHC's research expertise and academic strengths in medicine and dentistry with HHCC's large patient base, Dr. Cutler believes that the allied institutions will be able to provide patients with greater access to the most advanced treatments and services in a network that will stretch from one end of the state to the other.

"My hope is that the alliance will leverage our unique strengths so we can be a site of trials for the most advanced treatments. Thus, if a new therapy were only available in a few sites in this country, Hartford would be one of them," Dr. Cutler explained.

Patients will benefit from the alliance almost immediately by having access to physicians at both Hartford Hospital and John Dempsey Hospital in Farmington. Programs that could be among the first to be integrated include renal dialysis, chronic rehabilitation, home care, home infusion, psychiatry, surgery, cancer and cardiovascular services.

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Please send them to:

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The Physician as Poet

Outside the ICU

outside the ICU
they stand
        scattered
stiffly
        without purpose

huddling
        like refugees
                awakened by a hammer at the door
                torn from their beds
        transported barefoot in the night

        just now unloaded at the terminal
wrinkled
        travelsore in a land whose language
        they find strange
and customs that make no sense

waiting
                for the authorities
        having not yet been told
to line up here
        or go through that door

                grayfaced and unwashed
        they shift from foot to foot
                or lean against the wall

        trying to comprehend
how it has all
        come
                to an absolute

halt
        of the normal senses
        and ordered sequences
                wondering

when it will be safe
        to hope
                or pray
                        —Charles A. Polnitsky, M.D.

The Physician as Poet

The Morning After-Thought

After hearing an attorney (paid and sponsored by our area's medical organization as a national expert in the field) explain the commercial liaisons that physicians may form in the new market place of medical care.

Noted for his crafting of alliances,
the attorney came to explicate, or confound;
For what was the difference, and would we need to know,
when what we were to learn was our need for his purveyance,
protection at a price, but not our gain?

He told us there were facts to be addressed (convincing to the market, if not ourselves)
that constitute imperatives for change;
and flashed us slides of biased lengths of stays
of 'managed care' of elderly, no less
for show and tell (and sale).

But prolonged consideration of these, he said, when challenged on their science,
were too delaying of the other images he must show
of alphabetized relationships of mistrust and unease,
of MSOs and IPAs and PHOs,
(or was it MSAs and PPOs?)
and icons of physicians, in gender neutral suits,
around the squares called hospitals,
either owned or owning,
profiting or losing,
all in groundless flux,
so opportune....

The set piece set to our beleaguered eyes:
these all, he said, must be capturing or captive
in defensive or offensive strategies,
which venture capitalists, arbitragers, brokers, and his modest self
only fully understood (did he leave his card?).
But this was clear:

King Capital rules,
and since physicians, like their patients, tend to spend what they receive,
none is left for them to play this Game for long,
standing together or alone.

"Was it for *this* I entered medicine; or to care?" one asked.

Like a physician carrying mortal news, he answered, gently,
"Your spirit is commendable, but this is business USA of which we speak;"
and spoke admiringly of titans in Texas, a Pakistani Donald Trump,
a doctor from abroad (like myself) who swims to gold
on undertows that drag the natives down,
still bemused.

"Will all this save the public *any*thing?"

"Dear doctor, they will cost more."
These tiers of acronyms, devised for profit, come at a price.
Another country does it cheaper.
But patriots all foreswore its system of
the single payor.

Informed but not advised, we left attristed
not by bad news or good news, for he was 'value neutral';
but perceiving the attrition of ourselves
and public good.

Ian R. Lawson, M.D.
Danbury

Guest Editorial

Academic Health Centers and Managed Care

Amid the many changes occurring in the health-care industry, inadequate attention is being given to the acute financial pressures facing academic health centers. These pressures may force some of these medical schools and their teaching hospitals to close or to curtail significantly their educational and research missions.

Perhaps some marginally-managed academic health centers (AHCs) and hospitals should close. But the country's health will suffer if 20% or more of our medical schools and teaching hospitals shut their doors, as was recently advocated by the Pew Commission. The federal government and the health-care industry must develop a financial system that will allow AHCs to continue to teach the next generation of physicians and also conduct cutting-edge biomedical research. In return, the AHCs must change how they operate and, thereby, be responsive to the positive aspects of health-care reform.

Traditionally, the primary mission of AHCs has been to educate physicians. Medical education, however, cannot occur in the absence of patient care and biomedical research. Medical students and residents must daily integrate both the scientific underpinnings of medicine and the art of treating patients.

Because of the interaction of physician and scientist faculty members, AHCs can provide the most advanced care to patients, particularly those who have complex or unusual conditions. This interaction of practitioners and researchers also has fostered advances in prevention, earlier detection, rehabilitation, and multidisciplinary treatment of diseases and injuries. Building this unique collaborative combination of education, research, and patient care has been expensive. AHCs have received billions of dollars of federal, state, and private funds (philanthropy and insurance reimbursements). Today, every revenue source of consequence to AHCs is threatened.

In the 1960s, concern about an impending physician shortage (now recognized to have been incorrect) propelled the creation, often with public funding, of many new medical schools while class size was expanded at existing schools. Medical school enrollment doubled. Most of the new doctors pursued specialized fields of medicine, rather than primary-care fields (general pediatrics, general internal medicine, and family practice). Medical schools can be criticized for producing too many doctors and too many specialists.

Federal, state, and private reimbursements for clinical services provided by faculty practice plans rose dramatically in the past 30 years, contributing immeasurably to the support for AHC's educational and research programs. In fact, charges for clinical care at AHCs have been higher, in part, to offset the costs of education and research. But charges have also been higher because AHCs have not operated efficiently or focused on the most cost-effective tests or treatments.

Now managed-care organizations and Medicaid are reducing payments for clinical services and shifting patient care from teaching hospitals to community hospitals and ambulatory clinics. At the same time, federal support for research is declining.

For AHCs to survive, two groups must make major commitments. First, the AHCs must reform how they operate. We must find new sources of funds, use every dollar wisely, lower our costs of operation, and work more closely with other health-care providers and payers. We must change our undergraduate and graduate educational programs so we train more primary-care physicians, graduate the number of physicians the country needs, and determine the role (if any) of international medical graduates in the provision of health care within the United States.

We must eliminate duplication and waste in our hospitals and faculty practice plans to be competitive with community hospitals for patient-care contracts. We must care about patient satisfaction as much as entrepreneurial private practice groups do. We must seek opportunities to be valued partners of larger health-care delivery systems.

We must accept that we can no longer expect regular increases in government support to meet our research goals. We must promote collaboration between researchers and avoid duplication of effort, staff, and technology. AHCs must look for support from new sources, for example, from relationships with pharmaceutical and biotechnologic companies. Finally, all AHCs can make major efforts to attract philanthropic funding.

On the other hand, if AHCs commit to changing how they operate, those who have regularly benefited from their intellectual and creative excellence must make the necessary complementary financial commitment to support adequately medical education and research.

A unilateral reorganization by academic medicine alone is not sufficient. ***Who benefits from the recognized academic and clinical excellence of academic medicine?*** The federal government, the health-care industry, pur-

chasers of health care (you and me), as well as the disabled, the elderly, the chronically ill, the underinsured, and the poor! The "industrialization of medicine" may make cutbacks inevitable, but decreased expenditures cannot occur unabated in the private sector. Managed cost is not synonymous with managed care and not necessarily with quality. Leaders of AHCs, together with representatives from all who benefit, must lobby their state and federal legislators to debate the merit and slow the pace of draconian cutbacks in academic expenditures. Compromise must occur! AHCs must also proactively build alliances with managed-care organizations (MCO) and, thereby, add measurable, patient-respected quality and creative opportunities for health services and outcomes research, while at the same time demonstrating the financial benefit of inclusion of a carefully reconstructed academic faculty practice for a plan and its members. Carefully crafted educational partnerships between AHCs and MCOs will establish win-win situations for both. However, MCOs cannot alone adequately fund academic medicine's defining societal missions, and many MCOs still fail to see any benefit of collaborative engagement with AHCs. Therefore, other sources of funding must be found. I believe that federal action will soon be required, such as a tax on all payers, with these revenues used to develop an academic medicine support fund. Americans must demand this. Otherwise, the integrity of the finest medical delivery, education, and research system in the world will be compromised to everyone's great immediate and long-term disadvantage.

Peter J. Deckers, M.D.
Dean, University of Connecticut School of Medicine

Commentaries

The Primary Physician and the Family with a Handicapped or Chronically Ill Child

"I looked forward to visits with you when I was a teen-ager. I expected you to be concerned about me! I was disappointed that your greeting was usually 'How is your brother?' Even when I was sick, I felt you were thinking about him. I loved my brother. I wish he didn't have cerebral palsy and seizures. What I needed was for you to be concerned with my feelings and what was happening in my life."

I quote Sue Brown with permission. She is 28 years old as she recalls visits to my office during her childhood and adolescence!

Primary physicians have three important roles as they provide care for a family having a child with a handicapping condition or chronic illness. They develop diverse relationships with the parents, the affected child, and in many instances with healthy siblings.

A physician's initial contact often takes place in the neonatal period when one faces the difficult task of informing parents that their baby suffers with Down's syndrome or some other significant condition. Parents are overwhelmed with feelings of helplessness, self blame, and failure as they are forced to relinquish their dreams of having a healthy child. At the same time, they must nurture the child they have produced.[1]

Parents at this moment often request consultation with other physicians. This action does not suggest failure on the part of their primary physician. It represents the parents' need for additional opportunity to review the details of their child's condition and what they can anticipate in the future. Repeated discussions with various physicians helps parents tolerate their disappointment, humiliation, and loneliness at this difficult moment. Adapting to the reality of having a child with a handicapping condition or serious illness is a long, arduous task.

Many physicians provide enormous support for parents as they nurture a child with special needs. Parents and children appreciate the continuous participation of their primary physician as they negotiate the perverse administrative and financial obstacles that so often impede arranging appropriate consultation and treatment for their child's placement in an appropriate educational setting.

Whenever practical, a primary physician can offer important support for a child during hospitalization for evaluation, surgery, or specialized care. House officers, nurses, and consultants appreciate the involvement of the primary physician whose presence often alleviates some of the inevitable stresses experienced during hospitalization.

A physician may be unaware that one's involvement with parents and the child with a chronic condition may override consideration of the needs of other children in the family. The role of a primary doctor always is to serve as the personal physician for each patient seeking professional attention.[2]

Many doctors note in a record a young patient's special interests such as sports, dramatics, or musical activities. Having this information readily available enables one to initiate a visit by commenting on a specific aspect of the child's or adolescent's interests. This establishes immediately a doctor's interest in what is important in the life of a specific child or adolescent.

A warm personal relationship between the physician, parent and children established during the first decade frequently leads to valuable therapeutic relationships during adolescence.

An attorney now in her mid 30s recalls visits with her doctor during her high-school years:

"He always took time to ask me what I was studying, what I found exciting and interesting, or what I thought about a current issue or event. This gave me a chance to communicate with him as more than just a doctor."

Vague symptoms, particularly if there has been a recent death in the family are often frightening to children and adolescents. Obtaining a careful history and performing a thorough examination is always reassuring.

Siblings in families with a handicapped child, after discussing their specific personal health concerns, often spontaneously share their feelings regarding their sibling with special needs. Many healthy siblings comment that the members of their family are so preoccupied in caring for the handicapped child that there is little opportunity for family discussions or activities in other areas. They gain relief in sharing these feelings with their trusted doctor in a confidential settings.[3,4,5]

A 15-year-old boy comments: "The only thing we do as a family is planning our lives to meet the needs of my brother who has spina bifida."

A 14-year-old lad remarks "I wish I could have some time alone with my parents. I do love my brother, who has Down's syndrome, very much, but I would like just once to have a party with my friends without his being present."

Healthy siblings often feel that their needs are minimized in favor of the handicapped child. Diane, a nine-year-old girl with fever and malaise asked to see her doctor. Her mother believed that the illness represented a self-limited viral infection, and concluded that a visit to the doctor was unnecessary. Diane commented through her tears:

"If it were my brother Bobby (an autistic child) you would take him to the doctor right away."

The mother, recognizing the importance of fulfilling the child's wish, took her to the doctor's office for examination and treatment!

Healthy siblings often report that it is difficult to discuss their feelings at home because they fear it will upset their parents. They are relieved to be able to share their concerns with their trusted doctor in a confidential setting.

"Why him and not me?" asks a 17-year-old sister of a boy with a significant handicapping condition. "Could it happen to any children I might have? Should I see a genetics counselor?"

In many instances consultation with a medical geneticist can relieve to a great extent the concerns that are so often present in healthy siblings of individuals with a handicapping condition.

A high school junior asks "What will happen to my brother who has Down's syndrome when I leave home to go to college or when I get married and have a family? My parents are getting older. What if they should die?"

Fortunately, there are many suitable group homes which offer supervised living arrangements for handicapped adults. These settings enable siblings and aging parents to arrange appropriate placements for adults with special needs.

Primary physicians assume tremendous responsibility as they provide for the different members of a family. Meeting the needs of the parents, the handicapped or chronically ill child, and the healthy sibling offers an important challenge for primary physicians.

SUGGESTED READING

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Morris A. Wessel, M.D.

Clinical Professor of Pediatrics
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Primary Care Continuing Medical Education and Managed Care

Practical continuing medical education (CME) that is both convenient and inexpensive is a prerequisite for primary-care doctors to succeed in the arena of managed care.

However, for most of this century primary care CME has not been encouraged and developed as much as other areas of continuing education. Perhaps one of the reasons is that until recently the skills and knowledge that the original primary-care doctors (general practitioners) learned in training served them well for most of their careers because of the slower rate at which medical science progressed. For example, a mere 20 years ago there were only a few antibiotics and antihypertensives for practitioners to choose from, whereas today the numbers seem endless; and procedures like flexible sigmoidoscopy that are common today were not yet available. Another reason might be that primary care CME simply didn't fit the trend towards specialism that had developed in medical education.

Today with managed-care organizations' demanding a broader range of skills and a greater depth of knowledge from primary-care doctors than most of them were trained for, the lack of practical CME is more conspicuous and more in need of correction than ever before. Indeed, some managed-care organizations have already started to sponsor CME programs for physicians on their panels. Most of the larger organizations have sufficient resources to become independent, even dominant providers of CME which can allow them to determine the curriculum, the faculty, the format, and the frequency of a significant portion of the education that will be required of primary-care doctors in the future.

Because of managed care organizations potential role in medical education, it behooves primary-care doctors to collaborate with them to assure that such programs do not become unduly influenced by preoccupation in generating company profits; for example, by developing protocols that sacrifice quality in order to save money.

The best CME programs for primary-care doctors are usually sponsored by and presented in academic medical centers. Unfortunately, for most physicians attending them represents a significant loss of time from their offices. In addition, many of these programs cost as much as four or five hundred dollars; which, along with the cost of hotel accommodations, is a significant expenditure of time and money. Consequently most primary-care doctors would welcome educational programs that are close to home and inexpensive.

Managed-care organizations stand to gain by filling this need for primary-care CME, perhaps even more so than traditional providers such as medical schools and teaching hospitals. For example, a great part of the success of managed-care organizations depends on how effectively they can educate physicians to perform adequately in the managed-care environment. Indeed, managed-care organizations maximize their chances for success by maximizing the efficiency of the primary-care doctors on their panels. This means that as managed-care organizations compete with each other for a greater share of the marketplace they will find that it is just as important to manage the education of their physicians as it is to manage their clinical performance. As employers of primary-care physicians, managed-care organizations have the authority to insist that they attend "remedial" CME programs if doing so will contribute to corporate profits.

Thus there are many good reasons for primary-care doctors to collaborate with managed-care companies in the development of CME programs. Since most primary-care doctors work in the areas served by community hospitals, it seems reasonable that collaborative teaching programs take place in those community hospitals. Currently in Connecticut, some hospitals provide CME for their doctors through grand rounds. A few use the round-table format. These programs are often presented by local specialists who receive little if any compensation other than the satisfaction of teaching and perhaps some consultations as a result of exposure to their peers while teaching.

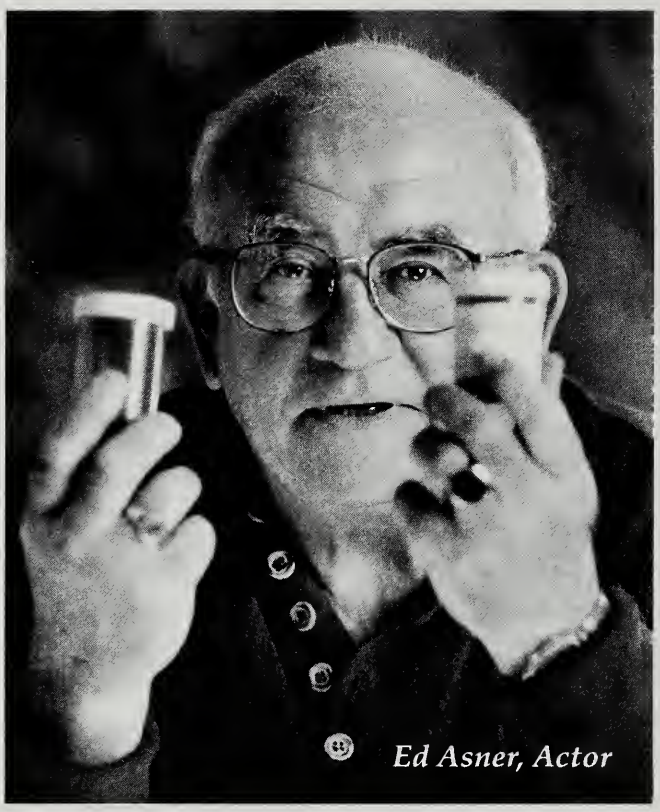
The problem with such programs is that depending on their specialty, some specialists are reluctant to impart those skills which managed care demands of generalists—skills such as minor dermatology surgery and nonoperative orthopedics—because they view primary-care doctors as potential competitors and believe that teaching them such skills poses an economic threat. In a fee-for-service system this concern is understandable but in a capitated system funds could be set aside to compensate specialists for this valuable function.

Continuing education is important for all physicians, many of whom would agree that the education they receive after starting practice is just as important, or even more so than that which they receive prior to it. Practicing primary-care physicians have unique educational needs because of their time constraints, their incomes, and the broad base of knowledge and skills that they are expected to possess in their expanded roles. Managed-care organizations have the responsibility—since it is they who are redefining the role of primary care—to develop CME programs for primary-care doctors that are convenient and practical and adequate.

In developing such CME programs it is important to keep in mind the words of Dr. Michael DeBakey, teacher and cardiac surgeon. In an essay on continuing medical education, he wrote: "I would hope that medical education would not be restricted to the absorption of facts, but that it would encourage critical thinking, would include ethical issues, and would foster a humanitarian approach to the patient."

Edward J. Volpintesta, M.D.
Bethel

Attention: Physicians



Have your patients' medicines had a check-up?

Many of your patients take several different medicines every day. Separately each one works well. But if they take two or more different medicines in combination without checking with you to be sure they work safely together, they can sometimes be harmful...even dangerous.

The next time you prescribe a medicine, ask your patients:

"What other prescription and nonprescription medicines are you taking?"

YES! Please send me free information to use when talking with my patients about their multiple medicine use.

Name

Address

City State Zipcode

Mail to:
NCPIE
666 Eleventh Street, NW
Suite 810
Washington, DC 20001

OR FAX: (202)638-0773

A public service message from the National Council on Patient Information and Education (NCPIE) and the U.S. Administration on Aging

50 Years Ago
From *The Connecticut State Medical Journal*
May 1946

Medicine and The War

Dr. Francis G. Blake Is Awarded Medal of Merit

Dr. Francis G. Blake, dean of the Yale School of Medicine, was recently awarded the Medal of Merit in recognition of his distinguished services to the Army Medical Department in World War II, the award being made at a meeting of the Medical Department Officers at the Walter Reed General Hospital, Washington. The citation accompanying the medal was signed by President Harry S. Truman.

Dr. Blake, who is also Sterling professor of medicine at Yale, was honored for his work as president of the Army Epidemiological Board. In commenting upon Dr. Blake's work, Major General Norman T. Kirk, surgeon general of the Army, declared: "Through his fidelity, adherence to ideals, integrity, and expert knowledge, he has contributed incalculable strength to the efforts of the Surgeon General to maintain and preserve the health of the Army."

During the period from September to the end of December, Dr. Blake served as director of a special commission which The Surgeon General and the U.S.A. Typhus Commission sent to New Guinea to investigate scrub typhus fever. Entering the field with selected associates, under conditions of danger both from disease and the enemy, he was eminently successful in the accomplishment of his mission. In addition to the formulation of the basic principles of control measures against scrub typhus, practical directions for the protection of the troops were drawn up and a wealth of valuable material was acquired for use in investigations in this country. Since Dr. Blake's return, this country has become the main center of research on scrub typhus.

Reprinted from the *Connecticut State Medical Journal*, May 1946.

Lt. Col. Edward H. Truex, Jr., Gets Army Citation

Lieutenant Colonel Edward H. Truex, Jr., of Hartford, recently promoted to that rank and chief of the aural rehabilitation section at the Army's Deshon General Hospital, has been awarded a citation for the Army Commendation Ribbon from the Third Service Command for "meritorious and outstanding performane of duty," it has been announced by Colonel C. J. Gentzkow, commanding officer, who made the presentation.

The certificate, signed by Major General M. L. Eddy, Commanding General of the Service Command, contained the following citation:

"Major Edward H. Truex, Medical Corps, is hereby authorized to wear the Army Commendation Ribbon by direction of the Secretary of War for meritorious and outstanding performance of duty, as Chief, Aural Rehabilitation Section, Deshon General Hospital from 27 July 1944 to 6 December 1945. His keen foresight, organizational ability, and tact have enabled him to obtain maximum effectiveness from his personnel. Tremendous work loads have been met without confusion, and morale has been kept at a high level. His outstanding professional ability, unfailing enthusiasm, and unhesitating use of his time and talents in subordination of his personal convenience, have resulted in superior medical care for deafened patients at this hospital, and reflect credit upon himself and the service."

A graduate of Dartmouth College and Harvard Medical School, Lt. Colonel Truex entered the service in September 1942. Before coming to Deshon, he was on duty at the Walter Reed Hospital, Washington, D. C., for eighteen months.

Lt. Colonel Truex will be separated from the service about 31 March following which he will work with the

Veterans Administration in Washington, D.C., for a period of three months to assist that organization in establishing a program of rehabilitation for hard of hearing veterans. He plans to resume practice in Hartford during the summer.

Lt. Colonel Verstandig Honored

Lt. Col. Charles C. Verstandig of Hamden, has been honored with the Army Commendation Ribbon and was presented with it at special exercises at Yale recently by Col. William F. Howe, Commanding Officer, Army Training Schools.

The citation, authorized by direction of the Secretary of War, reads:

"During World War II the Medical Department carried out its mission with outstanding success. Thus achievement was made possible only through the combined efforts of all Medical Department Personnel. Your service with the Medical Department has been exceptional when compared with others of the same grade of similar position, and I wish," stated Major General Kirk, "to commend you for your outstanding contribution as Medical Director, Armed Forces Recruiting and Induction Station, New Haven, from 1 March 1943 to 31 December."

Colonel Verstandig's terminal leave expired last February and since then he has returned to private practice as a radiologist at 129 Whitney Avenue.

Dr. A. L. Shure Honored for War Service

An Army Commendation Ribbon for meritorious service was awarded recently to Dr. A. Lewis Shure, orthopedic surgeon, according to word received from the War Department.

The medal was presented to Dr. Shure, who was recently discharged from the Army Medical Corps with the rank of captain, at ceremonies in the office of Col. William F. Howe, commandant of Army units at Yale University.

The commendation accompanying the ribbon acclaims Dr. Shure's services "from May 21, 1944 to December 27, 1945 as chief of the Orthopedic Service Hospital at Fort Knox, Ky. Accomplishing highly technical assignments with distinction, Captain Shure reflected great credit on his profession and the military service." It is signed by Maj. Gen. Robert S. Beightler.

Dr. Shure joined the Army in August of 1942, served with the Second Auxiliary Surgical Group in both the invasion of North Africa and the invasion of Italy and later returned to this country to assume command of the orthopedic section of the Fort Knox Hospital. He has resumed temporary practice in New Haven.

New Streptomycin Allocation Program to Make Provision for Civilian Uses

The Army Medical Departments which has received many requests for supplies of streptomycin to be used in treating civilian cases, has announced that all civilian inquiries and requests for this drug are to be sent to Dr. Chester S. Keefer, Evans Memorial Hospital, 65 East Newton, Boston, Massachusetts. Telephone Kenmore 9200.

Dr. Keefer is chairman of the Committee on Chemotherapeutic and Other Agents of the Division of Medical Sciences, National Research Council, and has been authorized to handle civilian requests, providing they are submitted by a physician giving sufficient technical information to enable him to decide whether streptomycin is indicated in the treatment of the case.

Distribution of limited supplies of streptomycin to civilians through the Committee on Chemotherapeutic and Other Agents of the Divisions of Medical Sciences, National Research Council, has been provided for in the allocation program recently established by the Civilian Production Administration. Other agencies receiving allotments of the scarce drug include the Army, Navy, Veterans Administration, and the United States Public Health Service.

Although there has been a general misconception that the Army controls the total streptomycin supply, actually an approximate thirty per cent will be allotted to the Army from the production for the month of March. The bulk of the limited supply received by the Army has been employed in treating urinary tract infections associated with spinal cord injuries, and a few serious infections which have proved resistant to penicillin. At no time has the allotment been adequate to permit any extensive research, such as experimental work on the treating of tuberculosis. In order that Dr. Keefer may obtain an adequate supply for civilian appeals, the Army has voluntarily agreed to a delay in its March delivery of streptomycin from producers.

Grants-in-aid of approximately $500,000 for the clinical study of streptomycin, contributed in equal shares to the National Research Council by eleven pharmaceutical manufacturers, has already been announced by the Chemical Division of the Civilian Production Administration. The participating firms constitute the Streptomycin Producers Advisory Committee of the CPA.

Dr. Keefer, who headed the clinical investigation of penicillin, will be in charge of the similar program on streptomycin and will submit recommendations, together with a report on the results. The CPA has announced that there will be no commercial distribution of streptomycin at this time, nor will the producers supply the drug directly

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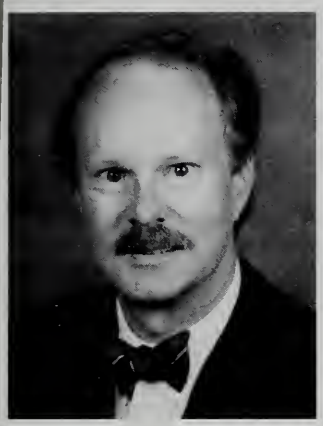
The Social Contract and Managed Care



I recently spoke to members of the Fairfield County media about the adverse effects of managed care on medical practice. But instead of a litany of poor outcomes for patients or a lecture on the economic impact on doctors, I pursued a more philosophical tone. Perhaps the physician audience will also find my remarks of interest.

We all remember the "social contract" from our college studies of philosophy and political science. Advocated by both Locke and Rousseau, its premise was the abrogation of individual freedoms for a larger, social good. By giving up some personal liberties, we would acquire the advantages of security and order under the rule of government.

While the social contract is of obvious practical benefit, it is founded on trust. When we give up certain rights and place ourselves under the control of government, we trust that this government will act in our best interests; that it will not take advantage of our voluntary waiving of individual liberties for its own personal gain. The symbol of this trust is the requirement of all our leaders to swear an oath prior to assuming office. Violation of this trust is grounds for overthrow or worse. Just ask George III or Louis XVI.

We have other contracts as well. Look at the business world, where daily each of us enters into contracts, some implicit and others explicit. Whether we are purchasing automobiles or health insurance, we exchange money for products or services. But instead of the trust which we place in our politicians, in the business world we have specific protections and guarantees. If the seller fails to fulfil his end of the bargain, the contract is null and void. We are refunded our money, and the matter ends. We do not chop off anyone's head.

What about medical care? Do physicians have either a social or business contract with their patients? And, if so, how are the changes in the delivery of health care affecting this contract?

Historically, the patient-physician relationship is more similar to a social, rather than business, contract. It too is founded on trust and might better be described as a professional covenant. The patient gives over his right to privacy, both of mind and of body, to his doctor on the assumption that the latter will act in the patient's best interest. As with our elected officials, the trust inherent in this agreement is symbolized by the taking of an oath. And just as a tyrant can lose his right to govern by violating his social contract, so the physician can lose his right to practice by violating his professional covenant.

The difference between the business contract on the one hand, and the social contract or professional covenant on the other, is money. In the business world, money is *integral* to the contract. Goods and services are not transferred without compensation. But in both the social contract and the covenant, compensation is *incidental* to the service. Rulers work primarily for the good of the people, physicians for the good of the patient. While it is perfectly acceptable to the public when CEOs earn multimillion dollar compensation packages, it is not so when either politicians or physicians do the same, because to do so, they must have in some way violated either the public or individual trust.

This professional covenant is also seen in the willingness and obligation of physicians to provide services at no charge for the indigent. We call this charity. Other professions share the same trust of and obligation to their clients. Despite all the bad jokes, lawyers receive the confidentialities of their clients, just as do physicians. And they also recognize their professional obligations, and do so in part by providing services *pro bono* to the indigent. The same can be said for the clergy, teachers, and other professions.

The tensions in today's health-care delivery evolve around the blurring of distinctions between the business contract and the professional covenant. The motivations and incentives of the professional ethic are now being admixed with those of the business ethic. And because the former is based on trust and the latter based on economics, we should not be surprised that health-care reform is so difficult. Let's go back to the source of the problem: money. Not long ago, prior to the revolutionary developments in medicine, physicians were free to practice according to their own standards. We made all the medical decisions, provided the care, and bore the responsibility and accountability for the outcomes. Insurers assumed risk for their insureds, administered their claims, and made a profit for their labors. They allowed us to treat our patients in any way we felt appropriate because the expense was not great. The limitations on the care a physician could administer were scientific and technologic.

But that has changed. With all the progress in medical care over the last three decades, the limitations now are not scientific or technologic. They are economic. We now can treat far more than we can afford. As the purchasers of insurance complained,

(continued on next page)

the insurers expanded their role. In addition to the financing of health care, they took control of the actual delivery as well. Insurers began to manage care, not because physicians were practicing *bad medicine*, but because we were practicing *bad economics*, because we were spending too much money. They began to assume decision making, usurping this heretofore professional task from the doctors, while leaving the latter with the provision of care and all the attendant responsibility and accountability. Managed care had its genesis in managing costs. And because the bills are paid largely by business, it is no wonder that business contracts are now impinging on professional covenants.

These changes are causing problems. Patients are realizing that there is a wizard behind the screen when they see their doctor; that the decisions previously based on that professional covenant have now a more businesslike affectation; that the reason they are not being referred to a subspecialist has more to do with saving money for someone else than providing quality health care for themselves. They are getting angry, and rightly so.

Patients are also fighting back, and they are going to the traditional source of arbitration for business disputes: the courts. They are demanding the bone marrow transplant, cardiac surgery, or whatever they and their physicians feel is appropriate care for them. HMOs are scrambling, trying to deny that they are actually providing, as opposed to financing, medical care, trying to hide behind the small print of the business contract and avoid the ethics of the professional covenant. They claim protection from "hold harmless" clauses and try to muzzle physicians with "gag rules," and the most flagrant oxymoronic defense, claim refuge under the "carrier-client" relationship.

But the insurers and HMOs are beginning to lose. Courts have not let them escape the professional obligations that come with providing health care, because their rules and regulations do indeed make them health-care practioners. Their denials of high- tech care are being overturned, and they are being assessed penalties for such capricious behavior. State governments are also on the alert, and in Connecticut there is pending legislation to put regulation of the HMO industry, heretofore limited to the Insurance Commissioner, under the jurisdiction of the Commissioner of Public Health. Just as physicians have always done, the managed-care industry must accept responsibility and accountability for its actions.

Now the insurers and HMOs are on the defensive. Daily, reports appear in both the lay and professional press about poor outcomes associated with the industry's restrictive regulations. Recent examples include reports of reduced survivals among cardiac and AIDS patients unable to receive subspecialty care, denial of emergency room coverage on the basis of Monday morning quarterback diagnoses, the neonatal tragedies associated with drive-through deliveries, and the recent *New York Times* account of a family's plight with a leukemic child. And the rank and file worker, saddled with a restrictive managed-care policy, is not amused to read in the *New York Times* that his company's executives are immune from these problems; they still get indemnity policies with broad coverage and full physician choice. And all this is occurring at time when all CEOs' compensation packages are skyrocketing, especially so those of the managed care executives. Has anyone seen the so-called managed-care "savings" returned to policyholders?

Managed care is hearing these criticisms and rapidly trying to adapt. The latest tactic is capitation, whereby physicians are paid a set dollar amount for a group of patients in exchange for provision of all necessary services. The benefit is that physicians are again responsible and accountable for all medical decisions and provision of care. The companies are off the hook. The downside is for the physicians. Now we are now also responsible for assuming the risk of these patients. We are now in fact becoming underwriters for our patients.

This leads to an interesting train of thought. As you recall, originally insurers assumed risk and administered claims in exchange for which they were compensated with profit. But under capitation, physicians are now assuming this risk, as well as making all the decisions, providing the actual care, and assuming responsibility and accountability. One can't help but ask, "If the insurers are no longer accepting risk, is the administration of claims alone worth nearly thirty cents of our health care dollar? Just what are they doing to justify their profits?"

Is there a solution? I am no Ira Magaziner (thankfully). I have no comprehensive plan for reforming health care. But there are a number of good ideas out there, many of them working their way through the state and federal legislatures.

First, we physicians are strongly advocating for a Patient Protection Act. This legislation requires insurers and HMOs to spell out their contracts to clarify those blurred areas in which the business contract and the professional covenant are in conflict. Patients should be fully informed of any incentives/disincentives, rules or regulations beyond their physicians' control which can affect their medical care. Already, "hold harmless" clauses have been outlawed in Connecticut, and "gag rules" will soon follow.

Second, we must push for regulation of insurers and HMOs as providers of medical services. This means they must come under the scrutiny of state and local health departments and physician review organizations. Policies on emergency room care, lengths of hospitalization, and access to subspecialty referral must be viewed by professional standards as well as economic ones. Patients must be given as wide a choice of physicians and hospitals as possible. This requires that there be fairness for providers as well. There must be guarantees of open physician enrollment and protection against arbitrary deselection and economic credentialing. In addition, managed care should makes some contributions to medical education, as its current discounted payments are decimating our nation's teaching hospitals and jeopardizing the research upon which all our futures depend.

Third, we must allow physicians to sponsor their own health networks and contract directly with employers and the government to provide services. As we are already acting as insurers by accepting risk through capitation agreements, why not let physicians themselves run the HMOs? If anyone

(continued on page 310)

Rule 6, Never Take Yourself Seriously

ROBERT U. MASSEY, M.D.

IF I mention William Carlos Williams* to medical students, some recall him as a modern American poet, one or two know that he was a physician, and most have never heard of him. These students went to high school in the late 1980s, early 1990s. So much for education in the postmodern, multiculturalist era. Those who may know a little of his work often remember *The Red Wheel Barrow*.[1]

so much depends
upon

a red wheel
barrow

glazed with rain
water

beside the white
chickens

Williams is of the generation of medical students' great-grandfathers (1883-1963), a time that must seem to 23-year-olds inconceivably ancient and mostly irrelevant. Yet he was one of the most highly esteemed neomodernist poets; another physician neomodernist poet was Gertrude Stein (1874-1946); one difference between them, among many, was that he was a real doctor, really practiced medicine!

> It's the humdrum, day in, day out, everyday work that is the real satisfaction of the practice of medicine, the patients a man has seen on his daily visits over a 40-year period of weekdays and Sundays that make up his life. I have never had a money practice; it would have been impossible for me.[2]

For him literature and medicine stood on the same footing, were taken equally seriously. "That is why as a writer I have never felt that medicine interfered with me," he wrote, "but rather that it was my food and drink."

In many medical schools the humanities have in one way or another been reintroduced to students to be a kind of balance in their lives, complementing the "everyday work" of medicine and showing that their universe can be seen through other lenses than molecular biology and how to survive in a managed-care world. *The Red Wheel Barrow* creates, I suspect, almost the same vivid image in everyone's mind, red, white, and rain, not at all hard to see and describe. Some will immediately observe that the poem doesn't make a sentence, maybe doesn't make sense, that there should be a "that" after "chickens," a conclusion to "so much depends upon...." But then it is easy to drop that conversation, not much to say, and move on.

From Williams's own comments about it we know that he meant something profoundly important by these 16 words: that so much, everything in fact, depends on small everyday, commonplace things, like chickens and rain and wheel barrows. In that sense, his autobiographical sentences about the everyday, humdrum work of medicine making up a life and the red wheel barrow and the rain and the chickens mean the same thing.

Winston Churchill, it was rumored, had a set of rules that he expected his associates, as well as himself, to live by. One of them, Rule 6, he said, was never take yourself seriously. When asked by someone newly appointed to his staff what the other rules were, he looked up and answered, "There aren't any."

My impression is that the managed-care outfits, especially those who are in it for the money, take themselves terribly seriously. And why shouldn't they? Dollars are pretty serious, especially to CEOs and stockholders, and, after all, someone has to manage the practice of medicine (the delivery of health care, sorry). And manage the doctors and the nurses and the technicians and all the others who are just doing their ordinary, everyday work. The trouble is it's in the nature of managers to manage other people's work. To keep you healthy. Health maintenance they call it. What nonsense.

The "humdrum, day in, day out everyday work" of medicine is all that should matter, is all anyway that matters to patients. Dr. Williams might say, "so much depends on" listening to a troubled patient, reading an EKG, repairing a hernia, prescribing penicillin, easing a pain, or just being there when the call comes, and leave it at that. But then, he would be the last person ever to take himself seriously, to preach a sermon, but if he did, he'd make it short and call it a homily.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

REFERENCES

1. *The Selected Poems of William Carlos Williams.* New York; New Directions Publishing Company; 1968:30.
2. Quoted in Cousins N, ed. *The Physician in Literature.* Philadelphia; W.B. Saunders Company. 1982; 310.

*See also page 280, this issue.

President's Page ...

can successfully balance off the competing interests of the business contract and the professional covenant, it is physicians. Current antitrust law prevents us from so doing. But such legislation is ludicrous and anachronistic. For example, HCA/Columbia can merge with Blue Cross of Ohio, and Aetna can acquire US Healthcare, but I am forbidden from discussing with a colleague my charges for an office visit. That's antitrust! Physicians need that famous "level playing field" if we are to compete with the insurance industry.

Finally, and most importantly, we must put patients back in charge of their health care. People are intelligent and able to make informed choices when provided with reliable information. We must give them a choice of delivery systems, whether straight HMO, point of service, or fee for service. We must let them choose the option most appropriate for them. We must shift the purchase of insurance from the employer, who is primarily concerned about cost, to the employee, for whom quality is more important. Insurance purchasing pools, enhanced tax deductions, and medical IRAs could put the individual back in control over his health care.

It may not be an overstatement to liken the changes in medical care today to those in politics during the Enlightenment. As the 18th-century philosophers argued over the nature of rule, whether inherent by birth or conferred by the people, so today we are debating medical care, as a simple commodity subject to the marketplace, or as a fundamental right entrusted to others.

As we physicians struggle with the fine print on our managed-care contracts, we do well to recall the words from our professional covenant. As Hippocrates counseled us, "With purity and holiness I will watch closely my life and art."

Dickerman Hollister, Jr., M.D.
President

50 Years Ago ...

for civilian requests. Physicians have been asked not to submit requests for streptomycin if the cases are susceptible to the action of the sulfonamides, penicillin and other therapeutic agents.

The production of streptomycin, which was approximately 3,000 grams last September, is expected to increase to nearly 27,000 grams by March. A companion drug to penicillin, streptomycin is produced in a similar manner, by fermentation and chemical extraction, and, like penicillin, requires carefully controlled conditions of temperature, air and sterility. It is expected to prove a valuable supplement in cases where infections do not respond to penicillin treatment, but studies have not yet advanced to the point where the methods of administration or the amenable diseases are definitely known.

Journal of the History of Medicine and Allied Sciences

In order to cultivate medical history as a vital, integral part of medicine, the *Journal of the History of Medicine and Allied Sciences* has been organized. At present there is in the United States only one other publication in this field, the *Bulletin of the History of Medicine,* edited by Dr. Henry E. Sigerist. It is the purpose of the new journal to provide another focus for studies in medical history. It will not compete with, but will supplement the *Bulletin.* Contributions will be welcomed on all aspects of the history of medicine, public health, dentistry, nursing, pharmacy, veterinary medicine and the various sciences that impinge on medicine. Papers also will be welcomed dealing with the evolution of the role of medicine in World War II as well as its part in the postwar period.

The *Journal* will be published quarterly by Henry Schuman, New York, the first issue having appeared in January 1946. George Rosen is the editor. On the board of editors is John F. Fulton of Yale and one of the consulting editors is Arturo Castiglioni of New Haven.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:
Robert U. Massey, M.D., *Connecticut Medicine*
160 St. Ronan Street. New Haven, CT 06511

This Month's Reading in Review

TIMOTHY B. NORBECK

California's rejection of proposals to overhaul the state's legal and insurance systems is raising questions about the prospects nationwide for tort reform.... Proposition 200 (no-fault insurance) lost 65% to 35%, Proposition 201 (restricting shareholder lawsuits) failed 59% to 41%, and Proposition 202 (limiting attorney fees) went down 51% to 49%.... Political analysts said that business interests failed to make a compelling case for tort reform and that, with charges flying on both sides, voters simply decided to "stick with the devil they knew."

Wall Street Journal (28 March 1996)

Forbes magazine noted two years ago that trial lawyers had become America's "third political party," contributing more money to political elections than any other segment of American society. One study, released in 1995, showed that plaintiffs' trial lawyers gave more to congressional candidates between 1989 and 1994 than the five largest labor unions combined.

Wall Street Journal (15 March1996)

"When the circus of politics is finished, the groundskeeper sweeps the litter into a pile and calls it the law."

Daniel B. Klein, University of California, Irvine, in *Liberty* magazine (April 1996)

"But to sue someone for failing to be the god we wanted strikes me as wrong. Why is it that we know so little about ourselves yet expect so much from others? We refuse to recognize the flimsy curtain that separates the intention from the result, the image from reality."

A Massachusetts teacher on refusing to sue his father's physician after the patient died the third day after elective knee surgery.
Newsweek (1 April 1996)

"They asked, but such humanitarian concerns are not what corporate care is about. In the competition with profits, patients must always lose ... corporate care is about the bottom line. There will be no exceptions,"

Columnist Bob Herbert, *New York Times* (15 March 1996) *NOTE:* He was commenting on the failed effort to get a bone marrow transplant for a three-year-old girl with leukemia in her home state of North Carolina, where there were two excellent centers.

(The health plan mandated that the baby be taken out of state for six months for treatment, so her older sister had to be sent to live with relatives in another state, her mother was demoted, and her father lost his job.)

"The managed-care companies will bring it upon themselves by becoming so big and arrogant that they will be seen as the monopolistic utilities they are. But their success will ensure a major governmental re-entry into the health sector to bring them to heel."

Robert B. Whitcomb, editorial page editor, *Providence Journal-Bulletin* (9 March 1996)

Dumb and Dumber: In Sacramento (California), accused burglar Brett Woolley, 25, had allegedly lined up the owner's stereo and other items by the front door ready to go but then decided to draw a bubble bath.... He fell asleep in the tub, the owner returned, and police were called to awaken Woolley.

Washington City Paper (15 March 1996)

While 89% of Americans are aware that average, healthy adults should exercise three times per week, only 49% actually follow through and exercise that often.... In addition, 20% of Americans report that they never exercise, according to a national survey conducted by the American Academy of Family Physicians (AAFP) and the Gallup Organization.

AAFP news release (20 March 1996)

Only In America: In Florida, Robert Attwood was sentenced in 1991 to five years for his fourth drunk-driving conviction.... In retaliation, he filed more than 200 suits against his jailers (cell was too cold, turkey leg too old, etc.).... Indigent inmates are not charged for photocopying and postage fees, and for one suit alone, eight county clerks spent three days copying 26,500 pages of complaints to mail to more than 260 defendants.

Readers Digest (April 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

From the Executive Director's Office

COUNCIL MEETING

Thursday, 21 March 1996

Attendance

Present, in addition to the Chairman, Dr. Joseph Czarsty, were Drs. Beck, Bigos, Deren, Eslami, Freedman, Hollister, Kamens, Katz, Keating, McDonnell, Montegut, Sosa, Tesoro, Timmerman, Wetstone, Wolfson, Zanker, and Zeppieri.

Also present were: Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Schaffman, Ms. Norbeck, Mr. Sullivan, Mr. Staples (all CSMS staff), Ms. Harney (NHCMA staff), Mr. Thompson (FCMA staff), Ms. Comarco (HCMA staff), Dr. Genel, Dr. Thompson (CSMS/IPA), and Dr. Parke, Chairman, CSMS Committee on Legislation.

Absent were: Drs. Ahamed, Bobruff, Brooks, C. Czarsty, Franklin, Geary, Handelman, Herzog, Lesnik, Mushlin, Redmond, Sadowski, Scarpa, Schwartz, Van Nostrand, and Watson.

Reports of Related Organizations

CSMS/IPA: Dr. David D. Thompson, Jr., President of the CSMS/IPA submitted a written report which included information on their experience with Medicaid, Workers' Compensation, commercial companies, and the State of Connecticut Employees programs, which outlined some of the problems in administering these programs. He further mentioned that under the preauthorization program, efforts are being made to aim this program more at overutilizers. Physicians who have been utilizing appropriately will be exempted and sanctioning will be softened for those who fail to preauthorize only rarely. MDHP has purchased a computer generated utilization review mechanism which will help identify physicians who are overutilizing so that an educational process can be begun that will ultimately make possible full withhold return. It was reported that there would be a modification to the fee schedule. When this plan was started, he reported, the goal was to find a way to manage care with physician input and control which has been accomplished. The challenge is to be successful. It must be proven to all our constituents, patients, physicians, and other providers, that healthcare can be provided that is the very highest quality at a reasonable cost. A lengthy discussion followed Dr. Thompson's presentation. It was VOTED to accept the report as information.

Report of the President

He reported that he wished to revisit an issue previously discussed by the Council that was brought up at a Fairfield County meeting and other counties as well and that was CSMS's legislative strategy concerning "Any Qualified Provider." There seemed to be some misunderstanding about the Society's position on this issue. He reiterated that at a legislative committee meeting it was stated that AQP appeared to be a dead issue as a single entity and was beginning negatively to affect CSMS's efforts at the Capitol, but the Society's position has not changed and the issue has not been abandoned. He asked that the Council reaffirm this position. It was VOTED that the Council reaffirm its position that at this legislative session AQP cannot be pursued and that the Society's position has not changed and the issue has not been abandoned. The vote was unanimous.

Dr. Hollister reported on his attendance at the AMA Leadership Conference and stated there is generally a favorable environment for controlling managed care and other issues on health care of interest to medicine. There were many sessions on Medicare and Medicaid and there was one session on human error which was very worthwhile.

The final copy of the pamphlet "Which Health Insurance Is Right for You?" was distributed to all members of the Council and will receive wide distribution throughout the state. The Media Directory he believes should be completed shortly. He also mentioned the availability of "Physicians-On-Line" which is now up and running.

He reported that at the Fiscal Subcommittee meeting PROCIS representative reported on the status of the undertaking which has not had the individual support expected. He stated that he was appointing a subcommittee to meet with the PROCIS representatives to discuss some of the problems they are encountering.

Dr. Hollister reported on his visit to Suriname, South America, and stated it was a rewarding experience. Health care and sanitary conditions left much to be desired. They are trying to get a cancer institute started which was why he was invited to go there. The report was accepted as information.

Report of the Executive Director

Mr. Norbeck reported on the following items of interest:

1. On 1 March, Empire Blue Cross in New York received the largest penalty ever assessed against an insurance company in New York—$1.1 Million—for violation of state insurance laws. The State Insurance Department, which levied the fine, said that Empire Blue Cross refused to pay for certain treatments for some enrollees while paying other policy holders for the same treatment, charging unapproved rates to customers, and for failing to maintain accurate claim files.

2. He stated that in the House Capsule recently published, there was reference to two California propositions, 200 and 202, which were on the California ballot. They would impose a no-fault auto insurance system and cap lawyers contingency fees at 15%. Proposition 200 (the no-fault measure) is trailing 2-1, Proposition 202 (the contingency cap) is slightly favored. Both propositions are a great barometer of lawyer strength in California and perhaps nationally. The battle essentially pits the computer titans of Silicon Valley against the state's trial lawyers' with help from Ralph Nader, various consumer groups, labor, and environmental entities. Millions of dollars have been spent by the insurance industry and the trial lawyers on these proposals and it has been a nasty campaign. The outcome of these propositions will be known on 27 March, and regardless of the results, the trial lawyers have promised to come in with new initiatives for the November general election which will make it even easier to file shareholder suits.

3. Mr. Norbeck gave a review on the Kennedy/ Kasselbaum bill, which is aimed primarily at creating portability in the group and individual insurance market. It also requires many other provisions guaranteeing coverage that are dividing the insurance industry. Opponents cite problems in New York with such legislation and point to a 1993 law where guaranteed issue of insurance coverage caused 500,000 individuals to drop their health insurance because of higher premiums. The report was accepted as information.

Legislative Update

Dr. Parke, chairman of the Committee on Legislation, commended all the individuals who are participating in this legislative session, staff, lobbyists, and physicians who have been testifying. He reported on the legislative reception and seminar that were held in February. He stated that they have opposed or supported 25 bills and have been tracking 13 more. A list of the bills of interest for CSMS prepared by Sullivan & LeShane was distributed to all members of the Council which included the status of each bill. Dr. Parke discussed some of the more important bills and responded to questions raised. He reported the most pressing legislation at this time was the Optometry Bill, and it was suggested that a letter be written to the majority and minority leaders of the legislature outlining the pitfalls of this bill. A major educational campaign is being undertaken on this issue.

It was VOTED that the Committee on Public Affairs be charged to develop a program with the counties to interact with legislators.

Connecticut Medical Insurance Company

In accordance with Council action, prior to each House of Delegates meeting, a report is presented from CMIC. A report was received from Dr. Sultan Ahamed, President and Chairman of the Board of CMIC. He reported that in an intensely competitive market membership nearly topped 3,000 with 97 new members and a 98% retention rate. In October, they began offering dentists and oral surgeons professional liability insurance and a business owner's package at competitive rates. The plan reaffirms CMIC's role as a partner that can understand physicians' practice needs and provide appropriate solutions. The report was received as information.

Report of Subcommittee on Preliminary Study of Nominations

With minor amendments, it was VOTED to approve the report of the subcommittee and to transmit the slate of nominees to the House of Delegates for election with the Council's recommendation for approval. In approving the report, the following changes were approved:

a. Disband the Committee on Emergency Medicine

b. Establish a new standing Committee on Workers' Compensation.

Medicaid Payments

A communication was received from the president of the Connecticut Psychiatric Association concerning balance payments to physicians who treat Qualified Medicare Beneficiaries under Medicaid. It was VOTED to refer the subject to CSMS counsel for further study.

CPT Coding for Immunization Injections

The House of Delegates referred the following resolution to the Council without recommendation:

"Resolved, that the AMA use its influence to urge third-party payers to utilize the CPT Codes which were created to provide a uniform language that accurately describes medical surgical and diagnostic services performed by physicians."

The AMA has been contacted and has no specific policy regarding this issue. According to AMA's CPT Department, codes 90700 to 90749 are to be used for immunization injections. Unlike the diagnosis and treatment injec-

tion codes, these immunization codes cover both the procedure and the serum used. If the serum was acquired free from public sources, the Modifier 52 (for reduced services) should be added to the code, to subtract the cost of the serum. (Some third-party payers may have a policy to use diagnosis / treatment injection codes instead, which do not include injectable materials, or even not to pay for injections of free serum at all.)

It was VOTED that a letter be sent to the maker of the motion and the local chapter of the Academy of Pediatrics informing them of current CPT Codes for injections, and other pertinent information, and ask them to report back to CSMS any HMOs that do not pay for this service.

Report of Task Force to Recommend Changes to the Impaired Physician Statute

Dr. Keating had informed the Council on 12 October 1995 that due to the complexity of the issues, any effort should not be undertaken in haste. He now informed the Council that the Task Force had several meetings and had evaluated all possible avenues to accomplish change including legislation, regulation or the existing protocol. Dr. Keating noted that after his presentation and as a result of the subsequent evaluation, that any legislative initiative regarding physician health matters should be put "on hold" for the upcoming legislative session. This conclusion was reached primarily because of the development of a good working relationship with the newly appointed commissioner of Public Health and the members of his staff, noting that there appeared to be a receptiveness with the commissioner's office to consider making changes to the current Protocol which could possibly result in some constructive and positive changes without having to pursue legislative change. Copies of the minutes of the Task Force for 19 September and 8 November 1995, which included background information, were distributed to the Council.

It was VOTED to approve the recommendation that the Task Force be disbanded, and to refer further discussions regarding changes to the physician health protocol to the Physician Health Committee and the Physician Health Program

Physician Health Committee

It was VOTED to approve two recommendations received from the Physician Health Committee, that the following statements be adopted by the Council as policy of the Physician Health Committee and the Physician Health Program:

It is the policy of the Physician Health Committee and the Physician Health Program that any diagnosis made in the case of physicians referred to the program will be carefully evaluated, and does not in and of itself constitute an implication that a physician having any particular diagnosis is not able to practice with reasonable skill and safety.

It is the policy of the Physician Health Committee and the Physician Health Program that no part of any physician's physician health file, which is a peer review file, will be released to any entity or individual, including the physician himself, or herself, even if the physician authorizes the release of such peer review information, except as required by the "Protocol Governing the participation of Established Medical Organizations, in the implementation of PA 84-148.

CMIC Nominations

It was VOTED to receive a list of nominees for election by the membership on 8 May 1996 as information. The nominees were Drs. Arthur Blake, Neil Brooks, Sally Crawford, Mehdi Eslami, Dickerman Hollister, Jr., Joseph Sadowski, and Theodore Zanker.

Vote of Thanks

Since this would be Dr. Zanker's last Council meeting, Dr. Czarsty expressed his thanks for his many contributions to the Council and his support of the State Society.

Dates of Future Council Meetings

Thursday, 13 June 1996
Wednesday, 14 August 1996
Thursday, 3 October 1996
House of Delegates meeting
Wednesday, 13 November 1996

CALL FOR PAPERS

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Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

AMBULATORY CARE

Full-time or part-time position available immediately in busy walk-in center in Enfield, Connecticut. Strong internal/family practice background preferred. Competitive salary with benefits and excellent work environment. Please call or send CV to: Susan T. Lindquist, M.D., 15 Palomba Dr., Enfield, CT 06082, telephone (860) 745-1684.

FAMILY PRACTICE

Immediate opening, full-time or part-time. Physician needed in local New Haven area family practice. Please call Dr. Robert Hambly or Karen at (203) 281-4055.

Busy family practice in Stamford seeks BC family practitioner. Full or part-time in pleasant, well staffed office. Full, on site laboratory. Good location. Serving private, medicare and HMO patients. Hours, salary negotiable. Please call or send CV to: Alan Falkoff, M.D., 838 High Ridge Rd., Stamford, CT 06905, telephone (203) 322-7070.

Family practice/internal medicine opportunity for experienced, Board Certified family physician or internist. Private practice with guaranteed, competitive salary, malpractice insurance and benefits provided. Picturesque New England town located in Fairfield County, Connecticut. Reply to: CSMS c/o FP/NH.

INTERNAL MEDICINE

Western Connecticut: An academically oriented primary care practice of several internists which has an integral role in the Yale Primary Care Residency Program seeks a BC internist. Opportunities include an enjoyable practice, a Yale faculty position, working with residents in the office, and partnership. Send CV to CSMS c/o IM/LR.

MEDICAL DIRECTOR

As one of the oldest and most respected names in the health benefits and managed care industries, Blue Cross & Blue Shield of Connecticut's reputation for excellence can influence your professional career in a positive way. We are seeking a Medical Director to serve as a key member of the Medical Affairs Team. This professional will have overall responsibility for providing clinical direction and medical consultation in support of our managed care initiatives. Experience with case management and utilization review required. Excellent communication and interpersonal skills essential. Comprehensive benefit package and performance bonus offered. Please forward curriculum vitae to: Jan Bohren, VP Human Resources, Blue Cross & Blue Shield of CT, 370 Bassett Rd., North Haven, CT 06473.

MEDICAL DIRECTOR OCCUPATIONAL MEDICINE

Excellent opportunity for a BE/BC IM, GP, ER, OM or GS to join this rapidly growing occupational medicine practice that is completing its Connecticut expansion. Clinical or administrative responsibilities and experience in Connecticut worker's compensation, ADA and soft tissue injury management required. Extremely competitive salary, bonus and benefits package offered, positions available immediately. For more information, send CV to the attention of Paula Wood, HR Administrator, Industrial Health Care Company, 1095 Day Hill Rd., Windsor, CT 06095.

PART-TIME

Physician needed, part-time in cardiac rehabilitation center, Monday and Friday, hours 8:00 AM to 12:00 NOON and 3:00 PM to 6:00 PM, in Stamford, Connecticut. Call (203) 322-1193 or fax CV (203) 322-0786.

Part-time M.D. needed for multi discipline offices in Torrington and Bristol. Flexible hours. Very pleasant environment. Call (860) 496-7246.

PART-TIME

Wanted—physician needed to work in walk-in facility in Darien. For basic general medical care. About 10-15 hours a week. Fees negotiable. Call Dr. Edelman (203) 656-3900.

PEDIATRICIAN

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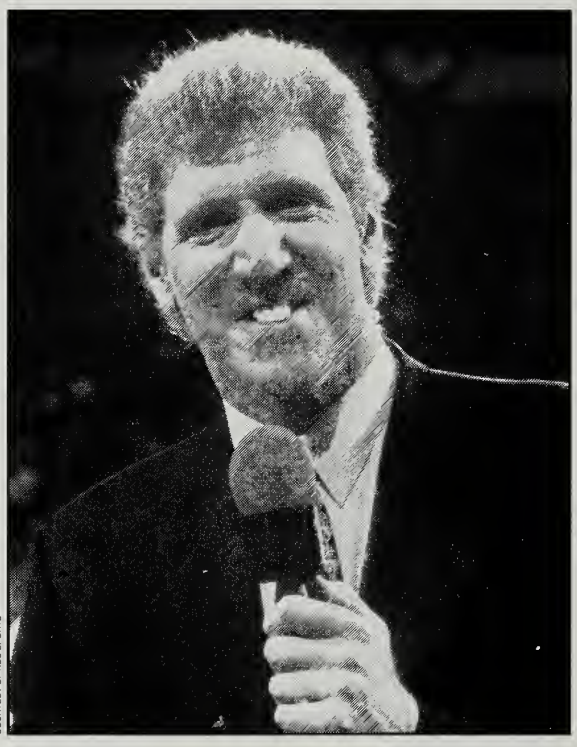

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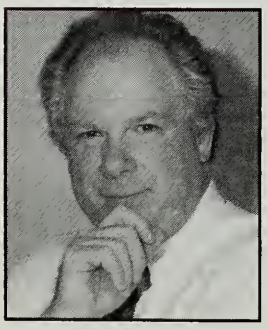

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Maternal Serum Screening for Birth Defects: Results of a Connecticut Regional Program

PETER A. BENN, PH.D., DONNA HORNE, B.S.W., ALICIA CRAFFEY, M.S., ROXANNE COLLINS, B.S., LISA RAMSDELL, AND ROBERT GREENSTEIN, M.D.

Abstract—Second trimester maternal serum screening provides a method to identify pregnancies at high risk for fetal Down's syndrome, trisomy 18, open neural tube defects, and a variety of other chromosomal and nonchromosomal fetal anomalies. Results are presented for a regional program to identify high-risk pregnancies using alpha fetoprotein (AFP), human chorionic gonadotropin (hCG), and unconjugated estriol (uE3) analyses (triple marker testing). A total of 27,140 women received screening. Using a midtrimester Down's syndrome risk of 1:270 to define the high-risk group, 5.26% of women of all ages were screen-positive for Down's syndrome resulting in the eventual detection of approximately 72% of the affected fetuses. The detection rate for patients under 35 at estimated date of delivery was 61% and for women 35, or older, the detection rate was 100%. A separate protocol to screen for trisomy 18 identified 0.2% of pregnancies, with 38% of the trisomy 18 cases present in this group. Over 3% of women screen-positive for Down's syndrome or trisomy 18 had a serious fetal chromosome anomaly. In addition, 2.89% of women had an elevated AFP (greater or equal to 2.0 multiples of median). This component of the screening resulted in the identification of 86% of the neural tube defects, 75% of the ventral wall defects, and also some of the other various fetal anomalies present in the screened population.

Since both laboratory and clinical data are combined to generate patient-specific risks, there is a need for quality control elements that go beyond that normally required for a clinical laboratory alone. We stress the need for comprehensive follow-up programs to evaluate screening programs and maintain high quality.

Abbreviations Used in Text
MS-AFP=maternal serum alpha fetoprotein
ONTD=open neural tube defect
hCG=human chorionic gonadotropin
uE3=unconjugated estriol
MoM=multiples of the median

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Introduction

SECOND trimester maternal serum screening has become an important component of prenatal care. In 1981 maternal serum alpha fetoprotein (MS-AFP) screening was introduced in Connecticut for the identification of women at risk for a pregnancy with an open neural tube defect (ONTD).[1] As well as being associated with ONTDs, elevated MS-AFP is also associated with an increased risk for other adverse perinatal outcomes and pregnancy complications.[2] Following the observation that MS-AFP is often lower in pregnancies where the fetus has Down's syndrome,[3] screening was expanded in 1984 to help identify an additional group of pregnancies at increased risk. In a prospective study in Connecticut, using a cut-off that classified 5% of women under the age of 35 as high risk, one quarter to one third of Down's syndrome fetuses were identified.[4]

Table 1.—Summary of Screen-Positive Rates	
Total number of patients with AFP tests	27,140
Total number of patients with triple-marker tests	26,364
Screen-positive for ONTD (AFP ≥2.0 MoM)	785 (2.89%)
Screen-positive for Down's syndrome	1,428 (5.26%)
Screen-positive for trisomy 18	53 (0.20%)
Screen-positive for ONTD and Down's syndrome	41 (0.15%)
Total screen-positive	2,307 (8.50%)

More recently, it has been noted that elevated maternal serum human chorionic gonadotropin (hCG) and lower unconjugated estriol (uE3) levels are also associated with Down's syndrome pregnancies.[5,6] MS-AFP, hCG and uE3 screening (triple-marker testing) also identifies some cases of trisomy 18,[7] Turner syndrome,[8] triploidy,[9] and trisomy 16.[10] Detection rates and false-positive rates depend upon the risk cut-off values used for screening, demographic and clinical characteristics of the screened population, and policies regarding referral and recalculation.[11]

In this report, we summarize results for a triple-marker testing regional program at the University of Connecticut Health Center. The importance of quality control and a comprehensive follow-up program to evaluate pregnancy outcomes is emphasized.

Materials and Methods

From 16 September 1991 to 30 September 1994, maternal serum screening (triple-marker testing involving MS-AFP, hCG, and uE3 analysis) was provided to 26,364 patients between 15.0 and 21.9 weeks gestational age. For an additional 776 patients with either insulin-dependent diabetes, gestational age 22.0 to 22.9 weeks, multiple gestation, known to have had prior chromosome analysis of chorionic villi tissue, or committed to amniocentesis, an MS-AFP test alone was provided. A Down's syndrome risk was provided to all patients except those with multiple gestations or where fetal karyotype was already known. The population was approximately 73.2% White, 10.2% Black, 14.1% Hispanic, and 2.6% other. Women 35 years of age or older at estimated date of delivery amounted to 8.7% of the total patients screened.

Laboratory methods used for screening have been described in detail elsewhere.[12,13] Specimens that were more than seven days from blood drawing, frozen, or showing obvious signs of hemolysis were not analyzed. Regressed median values for each specimen analyzed were established for samples obtained from 15 to 21.9 weeks and interpolated to generate day-specific medians. Measured concentrations of MS-AFP, hCG, and uE3 were corrected for patient weight and expressed in multiples of the median (MoM). To allow for the higher concentrations of MS-AFP in black women and lower concentrations in insulin-dependent diabetics, correction factors were applied. Age-specific risks were based on data by Cuckle et al[14] allowing for a 23% chance of loss of a Down's syndrome fetus between midtrimester and term. Policies for the use of ultrasound information to determine gestational age and recalculation for adjustments in gestational age were as described elsewhere.[12]

A midtrimester Down's syndrome risk of ≥1:270 was used as a cut-off to define the group of patients screen-positive for Down's syndrome. Screen-positive for trisomy 18 patients had MS-AFP ≤0.75 MoM, hCG ≤0.55 MoM, and uE3 ≤0.6 MoM. A maternal serum AFP value of ≥2.0 MoM was used to define the population screen-positive for an ONTD.

Table 2.—Chromosome Abnormalities in Patients Screened for Down's Syndrome or Trisomy 18			
	Screen-positive Down's syndrome	Screen-positive Trisomy 18	Screen-negative
Down's syndrome	27	1	11
Trisomy 18	1	3	4 (a)
Trisomy 13	1	0	4
Other unbalanced autosomal abnormality	6	0	4
Turner's syndrome	6	0	2 (b)
Other sex chromosome abnormality	3	0	1
Balanced translocation, inversion	9	0	1

(a) One case of trisomy 18 with omphalocele screen-positive for ONTD
(b) One case of low level mosaicism 45,X/46,XX

Table 3.—Neural Tube Defects and Some Other Abnormalities in Patients Screen-Positive or Negative for ONTD		
	Screen-Positive	**Screen-Negative**
Neural tube defects (open and closed)	24	4
Ventral wall defects	9 (a)	3 (b)
Hydrocephalus	3	9 (c)
Kidney, urogenital anomalies	5	20 (d)
Chromosome abnormalities	5 (e)	81 (f)
Demise, stillborn, neonatal death	36	177 (g)

a) Includes 1 case that had trisomy 18
b) Includes 1 case screen-positive for Down's syndrome
c) Includes 1 case screen-positive for Down's syndrome
d) Includes 2 cases screen-positive for trisomy 18
e) 1 case of triploidy; 1 case of trisomy 16; 1 trisomy 18; 2 unbalanced translocations
f) see Table 2
g) 22 cases screen-positive for Down's syndrome and 3 cases screen-positive for trisomy 18

Follow-up information on pregnancy outcome was collected by contacting referring physician offices and requesting completion of a questionnaire for each pregnancy. Data were also collected from the University of Connecticut cytogenetics laboratory and from ultrasound reports from regional maternal-fetal medicine referral centers. For the pregnancies included in this study, all had completed gestations and physician office contacts were made. Follow-up data were available for 92% of screen-positive and 68% of screen-negative patients in the study.

Results

Table 1 summarizes the overall screen-positive rates for the 27,140 patients referred for testing. Screen-positive rate refers to the proportion of patients with screen-positive results after correction for any major discrepancies between last menstrual period dating and ultrasound measurement of gestational age (>10 days) or other inaccuracies in the initial referral information.

Based on the actual number of Down's syndrome cases known to be present in the screened population, the overall Down's syndrome detection rate was 72%. For patients under 35 at estimated date of delivery, the detection rate was 61% and for women 35 or older, the detection rate was 100%. Detection rate was also computed on the basis of the incidence of Down's syndrome in the screened population. Based on the number of patients and maternal age-specific incidence of Down's syndrome in second trimester pregnancies,[14] it was expected that there should be a total of 46 cases of Down's syndrome in the screened population. Using this theoretical estimate of cases as the total number of cases present, the detection rate would have been 61%. The odds of a Down's syndrome fetus being present given a positive result was 1:53.

Table 2 shows that a substantial number of chromosome abnormalities other than trisomy 21 are identified as a result of screening. Three cases of trisomy 18 were identified among the 53 patients considered screen-positive for trisomy 18. One additional case of trisomy 18 was identified in the screen-positive for Down's syndrome category and one case of trisomy 18 (with an associated omphalocele) was identified as a result of elevated MS-AFP. The overall detection rate for trisomy 18 was therefore 63%. Other significant chromosome abnormalities are listed in Table 2. The odds of a significant fetal chromosome abnormality being present given a screen-positive (for Down's syndrome or trisomy 18) result was 1:32. When familial chromosome rearrangements are included (inherited balanced translocations, unusual inversions, and familial marker chromosomes), the odds of a chromosome abnormality being present given a screen-positive (for Down's syndrome or trisomy 18) result rises to at least 1:24. Of the 1,428 pregnancies screen-positive for Down's syndrome, 22 (1.54%) resulted in fetal loss.

Elevated MS-AFP is associated with open neural tube defects, other fetal anomalies, fetal death, low-birth-weight, and pregnancy complications. Table 3 summarizes some of the fetal abnormalities and loss identified in patients with MS-AFP greater or equal to 2.0 MoM. The 28 cases of neural tube defects reported to be present in the screened population of 27,140 compares well with the population incidence (approximately 1:1,000). Using the 2.0 MoM MS-AFP cut-off, the observed detection rate for neural tube defects was 86%. The detection rate for ventral wall defects (gastroschisis and omphalocele) was 75%. As the footnote to Table 3 illustrates, some abnormalities that MS-AFP screening failed to identify were, in fact, identified as a result of a screen-positive for Down's syndrome or trisomy 18 result.

Table 4.—Results of Prospective Trials of Triple Testing for Down's Syndrome

	Number of Patients	Cut-off for Screen +DS (a)	Number of Screen +DS (Rate) (b)	Number of Amniocenteses analyzed (c)	Detected DS/ Total DS
Study (Reference)					
Wald et al 1992 (15)	12,603	1:190	526 (4.09%)	397 (75%)	12/25 (48%)
Haddow et al 1992 (16)	25,207	1:190	962 (3.82%)	760 (79%)	21/36 (58%)
Phillips et al 1992 (17)	9,530	1:274	307 (3.22%)	214 (70%)	4/7 (57%)
Cheng et al 1993 (18)	7,718	1:195	461 (5.97%)	319 (69%)	20/22 (91%)
Burton et al 1993 (19)	8,233	1:270	484 (5.88%)	297 (61%)	10/12 (83%)
Wenstrom et al 1993 (20)	18,712	1:190	665 (3.55%)	516 (78%)	13/27 (48%)
Goodburn 1994 (21)	25,359	1:163	1051 (4.14%)	906 (86%)	36/48 (75%)
Bradley et al 1994 (13)	10,128	1:270	611 (6.03%)	445 (73%)	14/19 (74%)
Kellner et al 1995 (22)	10,605	1:270	766 (7.22%)	704 (92%)	12/20 (60%)
This study	27,140	1:270	1428 (5.26%)	955 (67%)	27/46 (59%)

Review of the results from prospective trials for triple-marker testing.
a) cut-off used to define the screen-positive for Down's syndrome group of patients (mid-trimester risk)
b) rate (%) of screened with positive results.
c) number of amniocenteses with percentage of the screen-positive patients receiving chromosome analysis
d) cases of Down's syndrome in the screen-positive group divided by the total number Down's syndrome cases in the screened population. In 5 studies (Haddow et al 1992; Wenstrom et al 1993; Bradley et al 1994; Kellner et al 1995; this study), total number of Down's syndrome cases is based on the theoretical number calculated from the population screened while in the other studies, total number of Down's syndrome cases is based on actual diagnosed cases in the screened population. The study by Phillips et al (1992) is confined to patients less than 35 years at estimated date of delivery. In our study approximately 3% of patients had their Down's syndrome risk based on AFP testing without hCG and uE3 testing.

Discussion

Results are presented for a regional program to identify pregnancies at high risk for birth defects using triple-marker testing. The detection rate for Down's syndrome (72%) and false positive-rate (5.17%) are in good agreement with those predicted by Wald et al[11] for triple- marker testing using a 1:270 Down's syndrome risk cut-off to define screen-positive patients. The proportion (2.9%) of patients with elevated MS-AFP (greater or equal to 2.0 MoM) and detection rates for neural tube defects (86%) and ventral wall defects (75%) are also close to expectations.[1]

The detection rates presented here assume that all cases of Down's syndrome, neural tube defects, and ventral wall defects were brought to our attention. Although follow-up was incomplete, it is likely that most of these cases were identified either through preferential reporting of cases with abnormal outcomes, referral to regional maternal-fetal medicine centers for ultrasound evaluation, as a result of consultation with the medical geneticist, or through follow-up testing in the cytogenetics laboratory. The incidence of clinically less significant chromosome abnormalities (sex chromosome abnormalities, translocations, unusual inversions, and familial marker chromosomes) is likely to be underestimated since not all patients undergo amniocenteses and the abnormalities would not be apparent from the phenotypes of the newborns. Other fetal anomalies (ie, excluding chromosome abnormalities, neural tube defects, and ventral wall defects) were also likely to be incompletely ascertained.

A number of prospective studies have now been published using triple-marker testing (summarized in Table 4). Comparison of the detection rates and screen-positive rates are confounded by the different cut-off values used to define screen-positive patients. Close inspection of the data shows that even when similar cut-offs are used, different programs may show substantial differences in rates. For example, using the 1:270 cut-off, our screen-positive rate (5.26%) is lower than the 7.22% of Kellner et al[22] with comparable detection rates. Similar variability in screen-positive rates and detection rates can be seen among laboratories using an approximately 1:190 cut-off. Variation in effectiveness of the programs may be attributed to maternal age variations in the screened population, the extent of the use of ultrasound assessment for gestational age, the policies used for recalculation when clinical data are revised, and also to variations in the laboratories' kits and quality assurance criteria.

Because of the complexity involved with combining three independent laboratory tests (AFP, hCG, and uE3) with clinical data to generate patient-specific risks, there is a need for additional quality- control elements in maternal serum screening that must go beyond those normally required for a clinical laboratory. While proficiency testing will identify grossly inaccurate results, minor deviations (which may result in too many amniocenteses or under-detection of affected pregnancies) can go unnoticed. For example, a laboratory slightly overestimating MS-AFP concentrations and also slightly overestimating hCG may show the same screen-positive rate as a laboratory with optimal test results. The two laboratories will not, however, be identifying as screen-positive precisely the same group of patients and the laboratory with inaccurate results will have a poorer detection rate. Duplicate testing of patient samples, appropriate choice of controls, adherence to strict criteria for acceptable results for controls, and replicate testing reduce, but do not eliminate, the risk of laboratory inaccuracy. Errors in demographic or clinical referral data will also lead to incorrect patient-risk assessments and a high frequency of such errors will have a secondary effect by corrupting data bases used to determine normal analyte concentrations.

Physicians referring samples to triple-marker testing laboratories need to be assured that the program is meeting performance expectations for detection and false-positive rates. Comprehensive collection of follow-up data and wide dissemination of the summary results is an effective way to provide this assurance.

Conclusion

Maternal serum screening using MS-AFP, hCG, and uE3 appears to be an effective approach to the identification of pregnancies at high risk for fetal Down's syndrome, trisomy 18, open neural tube defects, and ventral wall defects. Programs may show variable screen-positive rates and detection rates due to heterogeneity in the populations screened, variations in testing policies, and differences in laboratory protocols. Maintenance of a comprehensive follow-up program provides a means to evaluate screening performance.

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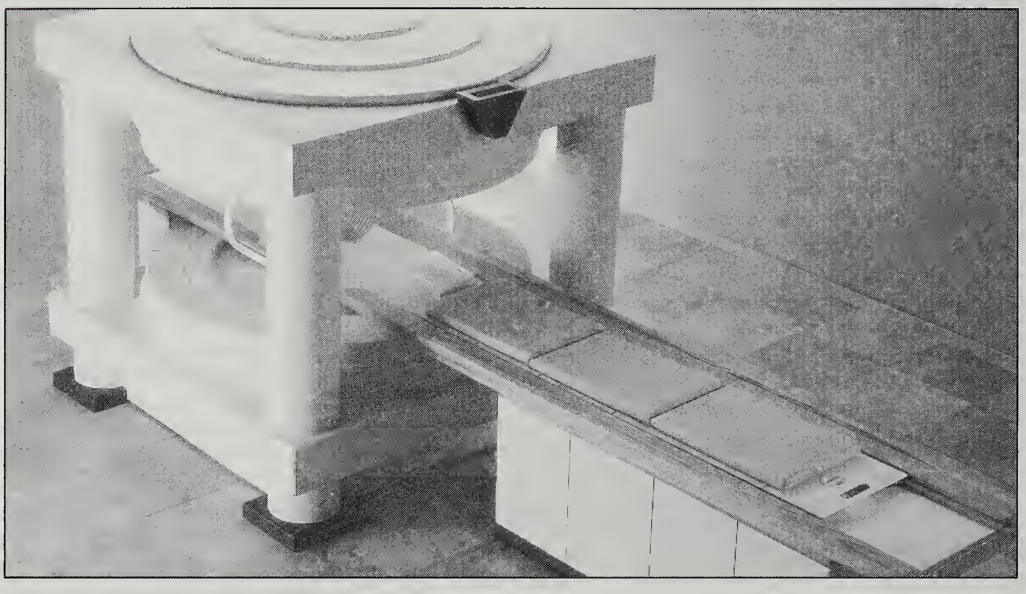

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BCG Against Tuberculosis: 1996

ROBERTA LENNER, M.D.

The BCG Story

IN 1906 Calmette observed that oral infection of guinea pigs with a weakly virulent equine strain of tubercle bacilli conferred resistance to reinfection by the intravenous route. In the following decade Calmette and Guérin attenuated a virulent strain of the bovine tubercle bacillus, and in 1921 this bacillus was administered orally to a newborn in a Parisian hospital. The child's mother had died of the disease and the baby was destined to live with a grandmother who herself was suffering from tuberculosis. That child was to remain free of tuberculosis for his entire life. Between 1921 and 1927, 969 children who were born of tuberculosis mothers or otherwise had close tuberculosis contacts were vaccinated with BCG. Of these children only 3.9% died of tuberculosis while the comparable mortality rate for unvaccinated children was 32.6%. Despite some controversy about such evidence,[1] BCG was recommended by the League of Nations in 1928 for widespread use in the prevention of tuberculosis. Its early use was associated with doubts concerning its efficacy and safety, but proper evaluation did not begin until the 1930's.

Abbreviations Used in Text

BCG=bacille Calmette-Guéin
RR=relative risk
CI=confidence interval
NTM=nontuberculous mycobacteria
PPD=purified protein derivative
MAI=Mycobacterium avium intracellulare
PPD-S=antigen prepared from *M. tuberculosis*
PPD-B=antigen prepared *M. avium intracellulare*
DTH=delayed-type hypersensitivity

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BCG vaccination was encouraged worldwide during the 1950s, and after the eradication of smallpox these vaccines became the most widely used vaccines in the world. Over the past three decades more than $3x10^9$ doses of various BCG vaccines have been administered.

Never cloned, the BCG organisms have since been maintained by different methods in several laboratories around the world, and as a consequence, the vaccines currently marketed as "BCG" by the different providers are by no means microbiologically identical.[2] Three parent strains, Glaxo-1077, Tokyo-172, and Pasteur-1173P2 account for over 90% of the BCG vaccines in use in the world today.

Only the United States and the Netherlands have not used BCG on a national scale. The recommended schedules differ widely among countries—from a single dose in infancy (the recommendation of the Expanded Program on Immunization of the World Health Organization), to a single dose in adolescence, (the policy in the United Kingdom), to repeated vaccination throughout childhood (the program in many Eastern European countries). In some countries repeated vaccination is universal; in others it is based either on tuberculin negativity or on the absence of a typical scar.[3]

BCG vaccines also provide some protection against leprosy, but the range of efficacy has varied in the four populations that were studied: from 20% in Burma to 80% in Uganda.[4,5]

Safety of BCG Vaccine

Although the BCG vaccine is thought to be relatively safe, there are a few things to be noted. The most well-known catastrophe that has cast a cloud over the reputation of BCG vaccines occurred in 1929. In Lübeck, Germany,

251 children received a BCG vaccine prepared at a local institute and, 72 of these children died. The investigation following this tragedy revealed that the BCG vaccine given to these children was contaminated by virulent tubercle bacille cultures which were also maintained at that institute. BCG was thus vindicated, but public confidence in the vaccine was shaken and Calmette died in 1933 a disheartened man.[6] In the 1980s, Lotte attempted to evaluate BCGs safety and arrived at two major conclusions.[7,8] First, the reports of severe neurologic or fatal sequel were extremely rare, far less than that reported for the smallpox vaccine. Second, Lotte listed a variety of more common minor adverse effects in addition to induration and ulceration of the vaccination site. Prominent among these adverse effects are regional suppurative adenitis,(frequency of 0.1 to 38/1000) and osteitis (10.01 to 330/106). Recently a new question has arisen regarding reports of systemic BCG infection in individuals infected with the human immunodeficiency virus.[9,10,11] BCG vaccination is thus contraindicated in patients with clinical AIDS.

Efficacy of BCG Vaccines

In 1994, an extensive meta analysis was published by Colditz et al regarding the efficacy of BCG vaccine.[12] It included 14 prospective trials and 10 case-control studies concluded between 1948 and 1991.[13-37] Combining data from these trials gave a relative risk (RR) for tuberculosis of 0.49 among those vaccinated with BCG [95% CI, 0.34 to 0.70], equivalent to a protective effect of 51% against tuberculosis. Only seven of these trials reported on deaths from tuberculosisis. The combined RR for death from tuberculosis among the participants who had received BCG vaccine was 0.29 [95% CI, 0.16 to 0.53]. Thus the BCG vaccination had a 71% protective effect against death from tuberculosis.

Five case control studies reported results of tuberculosis meningitis. Based on 181 cases of meningitis, BCG vaccination had a protective effect of 64%. Three studies of BCG vaccination reported data on BCG efficacy in preventing disseminated tuberculosis demonstrating a 78% protective effect.

Thus the vaccination with BCG was associated with a significant reduction in both pulmonary tuberculosis and extrapulmonary disease. However, even higher rates of protection were observed against severe forms of tuberculosis, such as disseminated disease, meningitis, and death.

Variation in Efficacy of BCG Vaccine

Reviewing the trials in which BCG efficacy has been studied up to the present time, one finds wide variations in results, with RR ranging between 0.17 and 1.56.[13-37] These studies were concluded in different geographic areas, using different BCG vaccines and statistical methods. The reason for these variations is still unknown. Several investigations and experimental studies in animals and humans to study this variation in effectiveness yielded the following explanations:

Interference with or masking of protection by environmental mycobacterial infections .—One of the most compelling explanations for the variability in protective efficacy of BCG in different geographic areas is based on the recognition that infection with environmental or atypical mycobacteria differs in frequency and intensity between different populations and that prior exposure to some of these microbes can provide a degree of protection against tuberculosis.[6] Hence, BCG vaccine may appear to be less effective in reducing the incidence of tuberculosis in populations among whom the prevalence of infections with nontuberculosis mycobacteria (NTM) is relatively high.[38] Studies of animals lend support to this idea. Klugh and Pratt vaccinated guinea pigs with an NTM or with BCG vaccine. After challenge with a virulent human strain of *M. tuberculosis*, nine of 25 control animals died of tuberculosis, while none of the vaccinated animals did.[39] Palmer and Long concluded an extensive experimental study, in which groups of guinea pigs were inoculated intradermally with one of four different avirulent mycobacteria (*M. fortuitum, M. avium, M. kansasii,* and a scotochromogen called Gause*).[40] Later some animals in each group were vaccinated with BCG. Still later, some in each subgroup were inoculated intraperitoneally with virulent tubercle bacilli. The animals challenged with *M. tuberculosis* showed a longer survival if they had been prevaccinated with atypical mycobacteria. The four NTM used in the trial provided different degrees of protection against *M. tuberculosis* challenge; *M. kansaii* was about 70% as efficacious as BCG. The authors also concluded that the antituberculosis effect of BCG was not additive to the previously gained protection by atypical mycobacteria. NTM were not widely recognized as human pathogens until the1950s. Unlike *M. tuberculosis*, NTM are thought to be acquired primarily from environmental sources, not from other humans.[41] NTM are found in soil, water, and dust. Humans become infected through inhalation or ingestion of the mycobacteria and, rarely, through percutaneous inoculation.

Surveys with PPD skin tests of nursing students in the 1940s uncovered striking geographic variations.[42] There were higher frequencies of positive reactors living in the southeastern United States which suggested cross-reactions by infection with organisms in nature that varied by geographic location. These findings led to the preparation and testing of antigens made from NTM.

*An avirulent, atypical mycobacterium, species not identified.

Studies of United States Navy recruits suggested that a person infected with *Mycobacteria avium intracellulare* (MAI) might have a small reaction with PPD-S (antigen prepared from *M. tuberculosis*) and a substantially larger reaction to PPD-B (antigen made from *M. avium intracellulare*).[43] The same authors gathered data among 625,000 recruits who underwent skin tests and analyzed subsequent rates of active tuberculosis. In recruits with larger tuberculin reactions (>12mm) with PPD-S, tuberculosis developed at a rate of 330 cases per 100,000 men from 1958 to 1965. In contrast, the rate of tuberculosis among men with intermediate PPD-S reactions whose PPD-B reactions were larger than their tuberculin reaction was only 17 cases per 100,000 recruits.[44] The authors interpreted the lower rates of tuberculosis among recruits who appeared to have been infected with MAI as indicating a protective effect provided by natural infection with NTM.

Another line of evidence to this hypothesis is provided by the fact that two of the three BCG trials with the most stringent criteria for excluding individuals with any prior tuberculin sensitivity, (if the absence of prior sensitivity indicates that the trial participants were less likely to have had exposure to cross-reacting infections), found higher efficacy of the vaccination.[13,45]

There are several confounding considerations, however, that argue against this hypothesis. There were trials, like the Puerto Rico vaccine trial[14] and the trial in schoolchildren in Georgia,[15] that did not support the above results. Furthermore, one could argue that if NTM infections were preventive of tuberculosis, then the net effect of prior exposure to NTM would be to reduce the apparent frequency of tuberculosis among both the vaccinated and unvaccinated populations without altering the apparent relative risk of tuberculosis or the protective effect of the vaccine.

Because many different NTM exist, the doses and antigens to test for these mycobacteria have been poorly standardized and their epidemiology is poorly defined in most geographic areas. It is not possible at this time to ascertain with confidence the impact of NTM on studies of the efficacy of BCG vaccine.

Differences between vaccines.—After Calmette and Guerin derived the BCG vaccine by invitro attenuation of the bovine tubercle bacillus, the vaccine was never cloned, thus, the BCG vaccines in use today differ microbiologically. The claim that different strains of BCG vaccines and variations in their viability translates into differences in their efficacy has never been proven. Moreover, quite different vaccines, for example, the Danish BCG and *M. microtti*, gave identical high levels of protection in the British Medical Research Council (MRC) trial.[31] Both Paris and Danish vaccines gave equally poor protection in the South India trial.[16] On the other hand, the Danish strain gave high protection in the MRC trial in the United Kingdom, but no protection in the Chingleput trial.[16]

Climate and storage of BCG vaccine.—Studies on the effect of exposure of BCG vaccine to high temperature and sunlight showed that both of these environmental factors may reduce the number of culturable bacteria in the vaccines.[46,47] Exposure to sunlight for five minutes in tropical areas reduced the number of culturable particles in BCG vaccine by 99%, whereas similar exposure in Denmark resulted in a reduction by less than 50%.[46] However, most of the studies of the efficacy of BCG vaccine did not indicate, or had insufficient data regarding the storage and handling of the vaccines: general conclusions, therefore, about the effect of climate on vaccine efficacy cannot be drawn.

Vitamin D.—Vitamin D metabolites may play an important role in the immune response: and this role is independent of its activity in calcium homeostasis. This has been extensively studied.[48] In addition, vitamin D metabolites may activate antimycobacterial substances in human monocytes and macrophages.[49] Crowle et al demonstrated that the addition of 1.25 hydroxycalciferol to cultured human macrophages inhibited the multiplication of virulent *M. tuberculosis*.[50] It has been proposed that transient vitamin D deficiency may play a role in the increased rates of tuberculosis reactivation among recent immigrants from tropical areas to temperate climates.[51] One cannot help but wonder about the validity of a long-lasting tradition in Europe, of sending tuberculosis family-members to tropical resort areas, which was also the only hope for cure even in my grandmother's time.

Ultraviolet radiation.—Experimental studies in animals have demonstrated that exposure to ultraviolet radiation distorts the antigen-presenting function of Langerhans cells,[52,53] and in humans it causes suppression of the T-cell mediated response to antigens.[54,55] When mice are exposed to ultraviolet radiation and then inoculated with BCG vaccine, they have an impaired ability to mount an immunologic response to BCG.[56] Whether any of these experimental findings are clinically important in their effect on BCG vaccine efficacy is unknown.

Genetic susceptibility.—There is little epidemiological support for the possibility that human genetic differences are responsible for the variable behavior of BCG.[57] Recently a genetic locus on chromosome 1 was revealed in mice that controls resistance to BCG.[58] There is no evidence, however, that such a comparable genetic determination exists in human. It is also difficult, if not impossible, to separate environmental and genetic influences in the observed variations of BCG efficacy.

Variations in virulence of M. tuberculosis.—There is evidence that isolates of *M. tuberculosis* from South India

were less virulent in guinea pigs than isolates from Europe.[59] However, it is not clear that the virulence of the South India strain would be low in other experimental animals; the fact that these strains were isolated from tuberculosis patients indicates that they are indeed virulent in humans. Later, in an experimental study, guinea pigs were vaccinated with BCG then challenged with three different strains of *M. tuberculosis* including one representative of the South Indian strains.[60] Animals challenged with the low-virulence strain had a lower level of hematogenous spread, but there was no difference in the ability of BCG to protect guinea pigs challenged with either low-virulence or high-virulence strains.

At present, there is no direct evidence to support the view that BCG is more protective against some isolates of *M. tuberculosis* than against others.

Methodological flaws.—It is well known that the major trials on BCG efficacy differ significantly regarding selection, diagnostic criteria, surveillance, and reported endpoints. In 1993 Clemens et al undertook an impressive methodological and statistical analysis regarding these factors.[61] The authors concentrated on four types of bias: 1) susceptibility bias, which occurs if subjects allocated to receive or not receive BCG are not distributed similarly with respect to their susceptibility to tuberculosis; 2) surveillance bias, which occurs if the vaccinated and unvaccinated individuals do not receive equal attention in follow-up examinations; 3) diagnostic-testing bias, which occurs if the criteria for soliciting of diagnostic tests are not equivalent in both groups; and 4) diagnostic-interpretation bias, which occurs if diagnostic information is not evaluated independently of knowledge of the patients' vaccination status. Though this exercise nicely documented most of the potential pitfalls of BCG evaluation, it did not explain many of the variations in efficacy observed in these trials. Most experts believe that the major differences in protective efficacy as reported in the several studies cannot be explained on methodological grounds alone and the differences also reflect biological factors.[6]

Correlation Between BCG–Induced Skin Sensitivity and "Protective Immunity"

Because of its easy facility, measures of delayed-type hypersensitivity (DTH) have been used as measures of "efficacy" in vaccine development; and most mycobacterial vaccine trials have devoted considerable effort to pre- and postvaccination skin testing. Although reports are controversial, there persists a widespread belief that postvaccinal tuberculin conversion is a sign of an "effective" BCG vaccination.[62] Thus many vaccination programs, especially the ones in Eastern European countries, recommend that BCG vaccination be repeated until an individual becomes tuberculin positive. There are no data from studies of human immunity to support this view. On the contrary, there are studies that have shown no evidence of a relation between BCG-derived DTH and protection. Hart et al looked at the 10-year incidence of tuberculosis in various subgroups of participants in the Medical Research Council trial of tuberculosis vaccines and studied the correlation between the immunity conferred by the BCG or the vole bacillus* and the degree of tuberculin sensitivity induced in the individual.[63] The authors concluded that with highly effective tuberculosis vaccines, such as the ones used in this trial, the degree of protection conferred on the individual is independent of the degree of tuberculin skin sensitivity induced in that individual by the vaccination. Four years later another study was undertaken by Comstock which investigated the relationship between the BCG induced "conversion" rates and the observed vaccine effectiveness against tuberculosis by analyzing data from all the trials for which appropriate data were available.[64] No correlation was found between protection and DTH. The author wrote: "the lack of correlation is obvious and underscores the futility of predicting potency from conversion rates."

Recently, a well-designed case-control study was conducted in Saudi Arabia to determine whether protection can be achieved by a BCG vaccine that induces no significant tuberculin reaction.[65] The authors found that tuberculin sensitivity contrasted with the protective effect. In age group five to 14 years, when protection was at its highest (82%), only 12% of vaccinated subjects were Mantoux positive. The decline in the vaccine protective effect was associated with a steady rise in tuberculin sensitivity, so that in age group 25 to 34 years, when the vaccine ceased to confer immunity, the majority of vaccinated subjects (60%), were Mantoux positive.[66]

Implications for the future

Given the controversies and, in some circumstances, the failure of the currently used BCG vaccines one might ask if there is a need for developing a new vaccine against tuberculosis. Certain populations would clearly benefit from a new vaccine with higher efficacy that provides more uniform protection. For example, it would be of value in areas with high incidence of tuberculosis, and where BCG has failed to achieve significant protective effect (ie, South India). Another concern is the increasing prevalence of HIV infection in many populations where there is an increase in the risk of adverse reaction to BCG and, as a result, would benefit from alternative preferentially killed vaccines. The development of new, particu-

*An acid: fast pleomorphic bacillus isolated by Wells from lesions of spontaneous tuberculosis from the wild vole. The organism, while it differs in its morphology and pathogenicity from other types of tubercle bacilli, possesses an antigenic structure indistinguishable from the mammalian types of tubercle bacilli. Hence, it has proved of value as an immunizing agent against tuberculosis (see ref. 17).

larly auxotrophic or killed vaccines, would raise the possibility of therapeutic vaccination aimed at individuals already infected or clinically ill with tuberculosis.

There has been reluctance to use BCG in populations in low-incidence countries such as the United States, because this would compromise the tuberculin skin test, which is an important element of tuberculosis control strategy. However, the incidence of tuberculosis, in particular multidrug resistant tuberculosis, is increasing. In addition there is the associated risk for close contacts, HIV-infected individuals, hospital patients, and health-care providers. Health-care givers have traditionally been at high risk for acquiring tuberculosis,[67] and if there were a more effective vaccine than the present BCG, defined risk populations might be encouraged to be vaccinated.

In conclusion, multiple field trials of new antituberculosis vaccines would present an enormous challenge, given the cost and time required for such undertakings and the necessity for follow-up of many thousands of individuals over many years. Since we still do not have an animal model in which the performance of BCG correlates well with that of human populations, it might be difficult to convince agencies to fund such trials on humans. The selection of any population for the trial of the new vaccine would present important ethical and practical problems. It will be a challenge to find young populations that are at high risk of tuberculosis and have not been exposed to extensive BCG vaccination. As far as the placebo group is concerned, ethical objections may be raised on the grounds that BCG appears to provide at least some protection and that it would be improper not to give high-risk individuals a BCG vaccination. Finally, since BCG has been shown to provide some protection against leprosy, the presence of leprosy in a new trial population might raise additional ethical argument in favor of providing at least BCG vaccination to all trial participants.

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Long-term Complication Following Subtotal Pancreatectomy for Nesidioblastosis: A Case Report

STEFAN G. CHEVALIER, D.O.

Abstract—Nesidioblastosis is the most common cause of neonatal hypoglycemia. Although medical therapy has been attempted, it is generally accepted that these infants should undergo a subtotal to near total pancreatectomy with splenic preservation. Complications from this procedure have been few, most commonly those associated with decreased insulin production (diabetes). We describe a case of a young, white male who presented with complaints of hematemesis and melena 18 years following subtotal pancreatectomy for nesidioblastosis.

Case Report

AN 18-year-old white male was admitted with complaints of abdominal pain, headache, dyspepsia, and heartburn for which the he had been taking aspirin and Tums. The patient had also noted black stools and had experienced several episodes of hematemesis. His past history included a diagnosis of nesidioblastosis as a newborn for which he had been treated by a subtotal pancreatectomy. Physical examination revealed a well-healed upper midline incision. Neither hepatomegaly nor splenomegaly were noted; his vital signs were stable except for orthostatic blood pressure.

Nesidioblastosis is a life-threatening form of hypoglycemia resulting from hyperinsulinism. The term "nesidioblastosis" was introduced by Laidlaw in 1938 for a diffuse increase of pancreatic islet cells that results in severe hypoglycemia in newborns.[1]

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Admission laboratory studies included a blood sugar of 125 mg/dL; hemoglobin, 11.7 g/dL; hematocrit, 33.1%; and a white blood cell count of 7,700/cu mm. No Howell-Jolly bodies were noted on the peripheral blood smear. He was rehydrated with a balanced salt solution and also received two units of whole blood. Approximately four hours after his admission his hemoglobin and hematocrit were noted to be 8.2 g/dL and 23.5%, respectively, and his platelet count was 60,000. He received another two units of blood as well as platelets.

An upper endoscopy performed by a gastroenterologist revealed a large clot and blood in the stomach. There were numerous prominent mucosal folds that were thought to be gastric varices. Subsequently, gastric and splenic varices, as well as splenomegaly, were shown by an abdominal ultrasound. A computed tomographic scan revealed prehepatic splenic hypertension due to splenic vein obstruction with subsequent development of gastric fundal, gastroepiploic, omental, and perisplenic varices, and absence of the splenic artery (Fig. 1).

Over the next 24 hours there was no further bleeding. However, on the morning of the first full hospital day, the patient had another large episode of hematemesis and he was orthostatic. His hemoglobin and hematocrit were 9.1 g/dL and 26.2%, respectively. An angiographic evaluation of the vascular supply to the spleen and stomach was undertaken. The angiogram revealed occlusion of the splenic artery and vein (Fig. 2), markedly enlarged, high-flow common hepatic and gastrodoudenal arteries with a large vessel, most likely representing the left gastric or hepatogastric trunk. That provided collateral distal reconstitution of the splenic artery through the short gastric arteries in the area of the splenic hilum (Fig. 3).

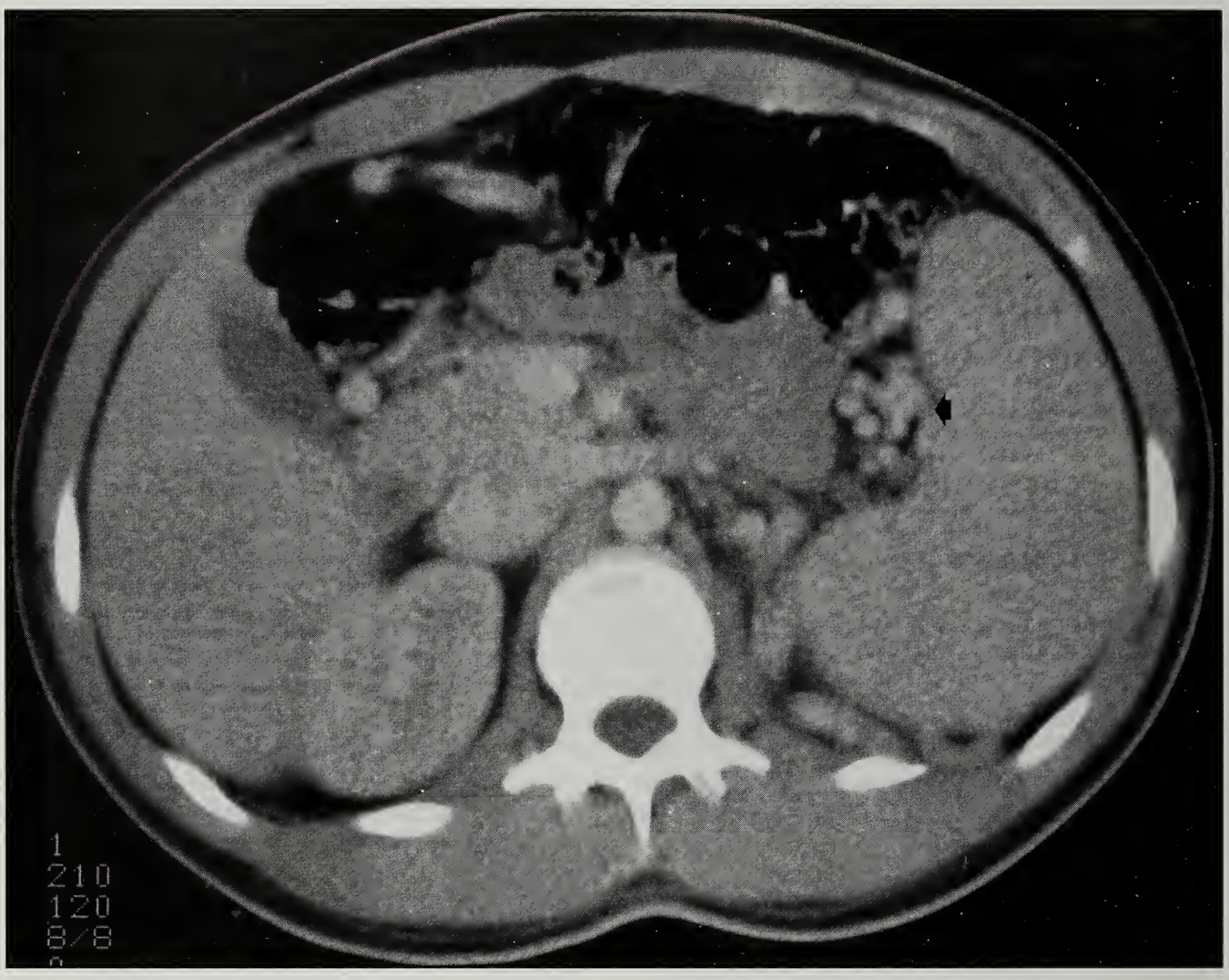

Figure 1.—Computed tomographic scan documenting large and extensive splenic perihilar varices.

Given the patient's continued hematemesis, declining hemoglobin and hematocrit levels, radiographic evidence of extensive varices, and orthostasis, he was taken to the operating room where a splenectomy was performed through a midline incision. The spleen measured 22 cm intraoperatively, and numerous, extremely dilated vessels were noted extending from the gastroepiploic artery up to and including the short gastric vessels along the greater curvature. Continuation of the dissection and mobilization of the spleen revealed a nest of dilated veins at the lower pole of the spleen where the pancreas had been. The reconstituted splenic artery and residual splenic vein were located, ligated, and divided. Numerous collateral vessels were encountered eminating from the retroperitoneum to the spleen. These were ligated and divided. The remaining celiac plexus vasculature was examined and noted to be in its usual position and of normal caliber.

On pathologic examination the 17x13x7 cm spleen weighed 970 gm. There was a smooth, grey-purple capsule and a moderate amount of attached hilar fat. The hilar fat contained soft purple-brown lymph nodes measuring 2.5 cm in greatest dimension. The cut surfaces of the spleen were firm and congested. An accessory spleen was also noted. No Howell-Jolly bodies were noted on microscopic examination of the spleen.

Postoperatively the patient developed a prolonged ileus that progressed to a small bowel obstruction requiring operative intervention. On exploratory laparotomy the dilated vasculature mentioned above was no longer seen. The patient's hemoglobin and hematocrit had stabilized and no further episodes of bleeding occurred. Following the second procedure the patient recovered well and was sent home tolerating a regular diet.

Discussion

This case dramatically demonstrates how a curative operation may affect a patient years after the original procedure. It is likely that during the resection of the pancreas the splenic artery and/or vein were damaged, leading to their thrombosis. This was followed by the

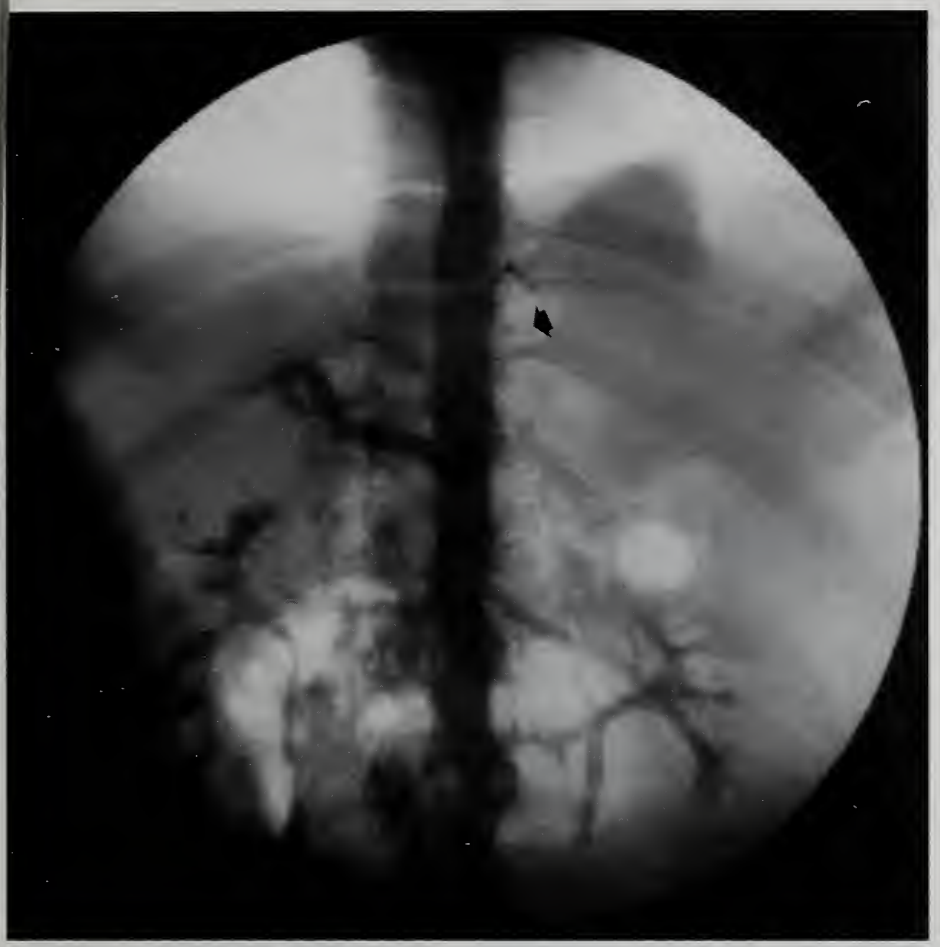

Figure 2.—Angiogram revealing the absence of a splenic artery.

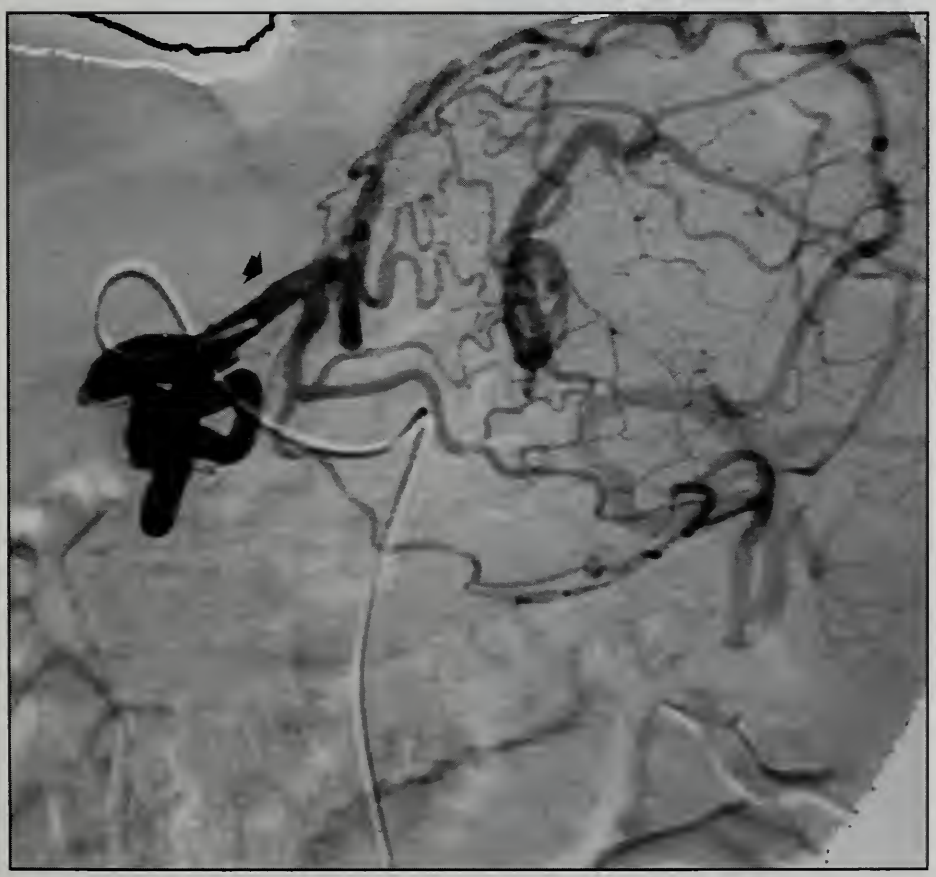

Figure 3.—Selective arteriogram of the left gastric artery revealing extensive collateral arterial flow around the stomach towards the spleen.

development of extensive arterial and venous collaterals to the spleen via short gastrics, to the right gastroepiploic and vessels from the retroperitoneum. Due to the patient's aspirin usage he developed aspirin-induced bleeding gastritis. The large extent of his bleeding necessitated interruption of the extensive vascular collaterals by performing a splenectomy.

A review of the literature confirms the need for a subtotal to near-total pancreatectomy as the therapeutic intervention of choice for nesidioblastosis. Long-term follow-up of these cases, however, has been lacking. This is the first documented case of a complication 18 years after a curative subtotal pancreatectomy for nesidioblastosis.

Nesidioblastosis is a life-threatening form of hypoglycemia due to hyperinsulinism. The diagnosis is commonly made in the neonatal period from criteria that include: 1) extremely high demand for carbohydrates (more than 15 g/kg/day), 2) an inappropiately high plasma insulin level, 3) an inhibited production of ketone bodies, and 4) glycemic response to glucagon despite hypoglycemia.[1,2] Immediate correction of hypoglycemia should be attempted by intravenous glucose boluses followed by continuous glucose infusion.[2] Following stabilization early operative intervention is indicated. The extent of the pancreatic resection has been unclear, but current practice is to perform a near total pancreatectomy with splenic salvage is the procedure of choice.[1,2,3,4,5] Salvage of the spleen through meticulous dissection of the pancreas from the splenic artery and vein will help prevent the complications of postsplenectomy sepsis.[5]

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Abstracts:
Third Annual Scientific Assembly of the Connecticut College of Emergency Physicians

15 November 1995

FOREWORD: The Third Annual Scientific Assembly of the Connecticut College of Emergency Physicians was held on 15 November 1995 at Saybrook Point Inn and Spa. Five abstracts were accepted for presentation with the president of the American College of Emergency Physicians, Greg Henry, M.D., judging the presentations. The winner of the "CCEP Best Research Presentation of 1995" was Tamas Perdy, M.D., a third-year emergency medicine resident at the University of Connecticut School of Medicine.

Pediatric and Adult Patients in Cardiopulmonary Arrest: Are Advanced Life Support (ALS) Guidelines Applied in the Prehospital Setting?

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Objective: To compare the proportion of pediatric *vs* adult patients for whom advanced life support (ALS) guidelines for cardiac arrest were applied in the prehospital setting.

Design: Retrospective cohort study.

Setting: Prehospital/urban emergency department.

Patients: A consecutive sample of 38 pediatric patients and 33 adults in cardiac arrest transported to the emergency department by ALS trained prehospital providers from January 1992 to March 1995.

Methods: Review of ambulance trip reports and emergency department records to determine interventions performed in the prehospital setting. Statistical significance of differences between the groups was determined by Fisher's exact test (2-tailed).

Results: There were 38 pediatric patients (median age, six months; range two days to 15 years) and 33 adults (median age, 66 years) with documented asystole at the time of initial ALS provider response. Advanced life support interventions performed are as shown below:

ALS Intervention Performed	Pediatric Patients N=38	Adult Patients N=33	*P* Value
Basic life support	38 (100%)	33 (100%)	NS
Cardiac monitor	35 (92%)	33 (100%)	NS
Successful intubation	19 (50%)	29 (88%)	<.001
Vascular access established	12 (32%)	25 (76%)	<.001
Epinephrine administered	11 (29%)	29 (88%)	<.0001
Resuscitated by ALS provider	0 (0%)	6 (18%)	<.01

Among the 19 pediatric patients and four adults who were not intubated, attempts to intubate were made in 11 (58%) pediatric patients and in three (75%) adults (P=NS). Among the 26 pediatric patients and eight adults in whom vascular access was not established, attempts to establish access were made in one (4%) pediatric patient and in eight (100%) adults (P<.0001). Intraosseous access was attempted in only nine of 32 patients (28%) less than six years of age. Among the patients intubated and/or in whom vascular access was established, ALS providers did not administer epinephrine to 12 of 23 pediatric patients (52%) and two of 33 adults (6%) (P<.001).

Conclusion: In our study population, endotracheal intubation, vascular access, and administration of epinephrine were performed significantly less frequently in pediatric patients that in adults. This probably is due to the infrequency with which ALS providers encounter pediatric patients in cardiac arrest. Methods to improve the interventional skills of ALS providers need to be studied.

Twenty-four Hours in the Life of an Emergency Department: A Survey of Ambulatory Patients at the Bridgeport Hospital

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Objectives: To assess why patients use the emergency department for ambulatory care.

Methods: Design: prospective, cross-sectional. Setting: Bridgeport Hospital Emergency Department—one of 56 participating hospital-based emergency departments in the United States. Participants: 122 walk-in patients (mean age, 27 years; 33% less than 18 years; 51% female; 28% white, 34% black, 36% Hispanic). Interventions: Patient survey during a 24-hour time period.

Results: Seventy-nine (65%) respondents were assessed as nonurgent by triage nurses, four (5%) required emergency hospitalization, and two (2.5%) were triaged away from the emergency department. All patients were asked the reason(s) they chose the emergency department for care: 122 (100%) reported that their symptoms required emergent or urgent assessment and treatment, eight (6.5%) indicated they were too sick to go anywhere else, and 42 (35%) were told to go to the emergency department by their primary-care providers. Convenience was an important issue, with 122 (100%) of patients reporting same-day access to the diagnostic and therapeutic skills of a physician, 12 (10%) reporting access to a physician during nontraditional working hours, four (3.3%) reporting inability to obtain a prompt appointment with their regular provider, and 17 (14%) reporting geographic proximity or absence of transportation. Few patients (<1%) reported financial barriers to care elsewhere. There were no differences in the types and frequencies of chief complaints between nonurgent and urgent/emergent patients, nor insured (85%) and uninsured (15%) patients. Eighty-five (70%) patients reported having a regular doctor or clinic, but seven (6%) reported the emergency department as their usual source of care. Eighteen (15%) patients received care for the same problem within the preceding two days, but only three (18%) had gone to their regular doctor or clinic. Six of the 18 (33%) sought care in an emergency department.

Conclusions: Ambulatory patients who seek care in the emergency department do so because of worrisome symptoms or convenient access to comprehensive care.

Correlation Between the Level of Emergency Physician Staffing and Physician "Wellness"

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Hypothesis: The level of emergency physician staffing inversely correlates with the level of emergency physician "wellness" as measured by expressions of dissatisfaction with physician (satisfaction) workload.

Methods: Ninety-six of 224 emergency physician members (42.9%) of the Connecticut College of Emergency Physicians working in 26 of the 34 (76.5%) acute-care hospitals in Connecticut completed surveys. The survey

included questions on demographic issues and nine areas of dissatisfaction with the emergency physician workload: one point for each response indicating dissatisfaction. Physician staffing levels and emergency department patient volume were determined by survey of emergency department directors.

Results: Respondents were 82.3% male with an average age of 42.8 and 10.4 years in practice (range one to 27 years). Forty percent of the respondents worked extra shifts for extra income. Anticipated length of career was 26 years (range 13 to 37 years). The majority of respondents were satisfied with the following eight indicators (number of shifts, adequacy of emergency physician coverage, level of workload, need to change workload, salary, adequacy of support services, ability to get a meal or toilet break, administrative support), although 52% reported dissatisfaction on the ninth indicator (shift consistently runs over). Multiple linear regression analysis of the dissatisfaction indicators and emergency physician staffing per emergency department visit showed physician staffing directly correlated (r=.407) with both number of shifts and years in practice (P<.0047).

Conclusions: Most emergency physicians were satisfied with the level of staffing. Emergency departments with higher levels of staffing had more experienced emergency physicians who expressed dissatisfaction with the level of staffing.

Voluntary Hospital Association (VHA) Chest Pain Study Phase 4: Implementation of an Emergency Department Rule-out Myocardial Infarction Program

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Hypothesis: Use of emergency department observation units to evaluate chest pain patients improves quality of care and utilization of resources.

Methods: An emergency department-based observation unit for patients with chest pain was implemented as a continuous quality improvement initiative. During the program data were collected in the emergency department registry (43,839 patients, July 1994-June 1995) and compared with a historical control (53,563 patients, April 1993-June 1994). Length of stay and total charges were calculated on three cohorts of consecutive patients with negative evaluation for cardiac disease: admitted, observed, discharged after initial evaluation.

Results: During the program 2,433 (5.5%) patients had the chief complaint of chest pain with 38.2% having a rule-out in the hospital (220 myocardial infarction patients identified) plus 12.8% having a rule-out in the observation unit (10 myocardial infarct patients identified). Eighty-two percent of observed patients avoided hospitalization. Quality of care improved: the observation rate increased (5.8% *vs* 12.8%, P<.001), the rule-out rate increased (44.9% *vs* 51%, P<.001), the return myocardial infarction rate decreased (1.4% *vs* 0.3%, P NS), and the calculated myocardial miss rate decreased (4.4% *vs* 0.9%, P=.007). Length of stay and charges were significantly lower (P<.01) for observed (n=65) than for admitted patients (n=43) (12.9 hours *vs* 77.9 hours) and ($1,428 *vs* $5,375), but greater ($P$<.01) than for discharged patients (n=524) (3.3 hours and $679). There were $895,742 per year less charges for every 10% of emergency department chest pain patients observed rather than admitted, and $181,995 per year added charges for every 10% of emergency department chest pain patients observed rather than discharged. There were $91,322 per year lower costs if the added emergency department observation eliminated the risk of failure to diagnose myocardial infarction.

Conclusions: Utilization of emergency department observation improves quality of care and reduces utilization of resources.

VHA Southern New England=13 nonprofit hospitals in the Voluntary Hospital Association.

Near Patient Testing: A Review of Testing Methods and Emergency Department Uses

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University of Connecticut Integrated Residency in Emergency Medicine

Inexpensive immunochemical methods and computer software have been incorporated into increasingly popular devices capable of completing standard electrophotometric and wet-chemical body-fluid analysis in the emergency department. Few nonindustry sponsored studies are available to guide the clinician in extrapolating the tests' dynamic performance for use at the bedside. This review examines widely available bedside non-blood testing methods and their clinical applications.

Ethanol is most often measured by breath analysis. New enzymatic saliva dipsticks may replace older methods due to ease and equivalent accuracy. New cost-effective multidrug screening test cards are available for evaluation of the obtunded patient with an unknown ingestion. Cross-reactivity remains a significant source of error. Urine dipsticks are the most common intradepartmental test. Positive findings in a patient with classic symptomatology provide evidence supporting treatment while a negative test in populations with low prevalence is adequate to rule out the disease. Further testing is recommended for high-risk patients. Testing stool and gastric contents for the presence of heme is a routine part of the emergency department patient evaluation. Newer card technologies have maintained high sensitivities with increased specificity. Patients with positive tests require follow-up. Management of suspected ectopic pregnancy has been significantly improved by immunochemical human chorionic gonadotropin testing. These tests are specific and have sensitivities that exceed ultrasound and precede the onset of clinical symptoms. Testing methods for rupture of amniotic membranes have poor sensitivities and have not improved over the past 40 years. Rapid methods utilizing pathogenic particles for detection of *Streptococcus, Neisseria*, and *Chlamydia* organisms prior to culture results are not reliable. Negative results do not substitute for cultures or provide sufficient cause to withhold treatment.

Loop Diuretics: Comparison of Torsemide, Furosemide, and Bumetanide

BONNIE P. CHEN, PHARM.D.

Introduction

TORSEMIDE, a pyridine-sulfonylurea loop diuretic, is the latest addition to the loop diuretic group (eg, furosemide, bumetanide). As with all the other classes of diuretics, loop diuretics are agents used in the treatment of edema associated with congestive heart failure, hypertension, cirrhosis, and renal disease. In addition, loop diuretics are used as acute therapy in relieving edematous states associated with the disease states mentioned above.[1] Understanding the differences among the loop diuretics and their clinical application is important, especially with introduction of new loop diuretics. The primary differences among the loop diurectics are their pharmacology and pharmacokinetics. This article will discuss major differences among the three loop diuretics, furosemide, bumetanide, and torsemide, and explore how these differences affect their clinical application.

Pharmacology

The chemical structure of the three loop diuretics is similar as shown in Fig. 1.[2] They inhibit the sodium-potassium-2 chloride resorptive pump at the thick ascending limb of the Loop of Henle. When administered intravenously, bumetanide and furosemide have been found to have an additional effect at the proximal tubule. In contrast, torsemide does not have an effect at the proximal tubule, and it is believed this is responsible for the decreased kaliuresis seen with this agent. Another unique pharmacologic property of torsemide is that it can inhibit chloride conductance at the basolateral membrane. However, the clinical significance of this observation is controversial, because the inhibition occurs only at high concentrations (100 times greater than that required for the luminal effects).[2]

Pharmacokinetics

The bioavailability of bumetanide and torsemide is about 80%, while furosemide varies over a very wide range from 11% to 90% with a median of 50% (see Table 1). The time of peak plasma concentration is about the same for all three loop diuretics. When the drug is administered orally, the peak plasma concentration occurs within 0.5 to 2 hours. The volume of distribution is similar for the three drugs because of similar chemical structures and protein binding. Both bumetanide and furosemide have similar clearance, but clearance is much lower with torsemide. This can be explained by the reduced amount of unchanged torsemide excreted and its longer half-life. Approximately half of the bumetanide and furosemide dose is excreted unchanged in the urine compared to about one quarter of the dose with torsemide. Bumetanide and furosemide share similar elimination half-lives (about one hour). Torsemide, on the other hand, has an elimination half-life of four hours. After intravenous administration, bumetanide and furosemide's duration of action is about 2 to 2.5 hours. Torsemide has a longer duration of action, about six hours, therefore its recommended dosing interval is once daily for all indications.[2] The dosing potency of these drugs is estimated to be 1 mg of bumetanide=40 mg furosemide=10 to 20 mg torsemide.[1]

BONNIE P. CHEN, Pharm.D.

This series on Drug Information Updates from Hartford Hospital is provided by the Drug Information Center, Department of Pharmacy Services, Hartford Hospital.

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Table 1.—Pharmacokinetics of Loop Diuretics—Median Values in Parentheses			
	Furosemide	**Bumetanide**	**Torsemide**
Bioavailability (%)	11-90 (53)	59-89 (80)	79-91 (80)
Time to peak concentration (h)	1-5 (1.6)	0.5-2 (1.3)	1
Volume of distribution (L/kg)	0.07-0.35 (0.16)	0.14-0.28 (0.17)	0.09-0.31 (0.16)
Protein binding (%)	> 95	> 95	> 95
Clearance (ml/min/kg)	1.5-4.4 (2.2)	1.8-3.8 (2.6)	0.33-1.1 (0.6)
Fraction of dose excreted in urine unchanged (%)	49-94 (60)	36-69 (65)	22-34 (27)
Half-life (h)	0.3-3.4 (1.0)	0.3-1.5 (1.2)	0.8-6.0 (3.3)

Metabolism

The different routes of metabolism for these agents can have a clinical effect in conditions such as renal and hepatic impairment. With bumetanide, about half of the dose appears in the urine as unchanged drug. The other half undergoes hepatic metabolism, with metabolites either excreted into the urine or bile. In contrast, furosemide's elimination occurs through glucuronidation, and there is evidence that part of this may occur in the kidney.[2,3] Half of a dose of furosemide appears in the urine as an unchanged drug, and another 20% appears as furosemide glucuronide. The remaining 30% of the dose has an unknown disposition. Torsemide is similar to bumetanide in that it undergoes extensive metabolism. About 25% of an intravenous dose appears in the urine as an unchanged drug. Torsemide has three different metabolites: M1, M3, and M5. M1 is one-tenth as potent as torsemide, and 11% of the dose appears in the urine as M1. M3 is as potent as torsemide, however, only 3% appears in the urine. M5 is not an active metabolite.[2,3] Therefore, the presence of these metabolites is clinically insignificant.

Some generalizations and conclusions may be drawn based on the different metabolic pathways of these three loop diuretics. Bumetanide and torsemide are metabolized by cytochrome P450* pathways. Their metabolism may be subjected to induction, inhibition, and phenotypic drug metabolism (rapid *vs* slow metabolizers). Also, because of their route of metabolism, there is less accumulation of the parent drug in renal impairment, which means less or no prolongation of the half-life. This clinical application has been tested in patients taking bumetanide with severe renal insufficiency; hepatic metabolism provided an alternative route of elimination for the drug. The same results have also been shown in torsemide. Since furosemide has no alternative metabolic pathways, it has a prolonged half-life in patients with renal insufficiency, leading to accumulation of the parent drug in renal impairment.[2,3]

*Enzyme system that breaks down the drugs in the liver.

Table 2.—Dose and Cost of I.V. Loop Diuretics		
Drug	**Dose**	**Cost***
Torsemide (Demadex®)	20mg IV QD	$0.20
Furosemide (Lasix®)	40mg IV QD	$0.65
Bumetanide (Bumex®)	1mg IV QD	$1.37
*Hartford Hospital acquisition cost		

Table 3.—Dosage Adjustment of I.V. Loop Diuretics in Renal and Hepatic Impairment		
	Renal Impairment	**Hepatic Impairment**
Torsemide (Demadex®)	↔	↔
Furosemide (Lasix®)	↑	↔
Bumetanide (Bumex®)	↔	↓
↔= no change in dosage; ↑= increase dosage; ↓= decrease dosage		

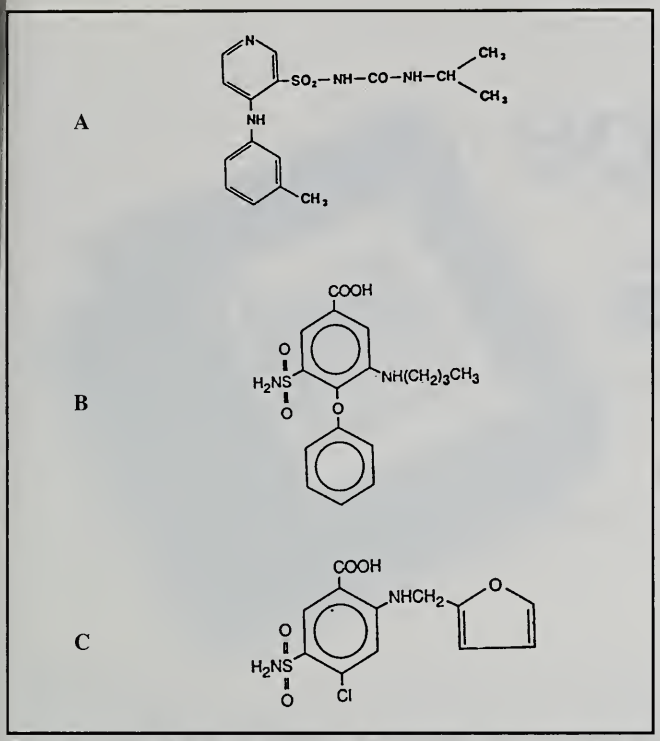

Figure 1.—Chemical Structure: Torsemide (A), Furosemide (B), and Bumetanide (C).

Place in Therapy

There are some differences and potential advantages among the three loop diuretics in special patient populations. Both torsemide and bumetanide undergo hepatic metabolism, therefore this nonrenal clearance of these drugs is not affected by renal diseases. Instead, the hepatic metabolism pathway compensates sufficiently for the decreased renal clearance, so dosage adjustment is not necessary with these two drugs in patients with renal impairment. In contrast, furosemide is affected by decreased renal function, and total clearance is reduced. Special caution must be taken in patients with severe renal insuffficiency, because furosemide's half-life can increase to as long as four to six hours. The metabolism of these drugs can also be influenced by hepatic diseases. Since furosemide's metabolism occurs extrahepatically, hepatic dysfunction does not affect its pharmacokinetics. However bumetanide's half-life and duration of action is prolonged in patients with hepatic diseases. When torsemide is given once daily, there is generally no accumulation in patients with hepatic dysfunction. Torsemide's liver clearance in patients with hepatic disease decreases similarly as bumetanide, but renal clearance of torsemide increases substantially to compensate for the liver clearance.[2,3]

Currently, there are no published clinical trials comparing torsemide with bumetanide. The available clinical trials suggests that torsemide share a similar efficacy with furosemide.[4] Other studies report no efficacy differences between bumetanide and furosemide.[5,6] Therefore, it is hard to conclude that the efficacy of one loop diuretic is greater than another. With similar efficacy among these agents, selection should be based on cost (the cost of loop diuretics is listed in Table 2). However, there are differences between these three loop diuretics that could affect their uses in special patient populations. In patients with renal impairment, dosage adjustment is not necessary with bumetanide and torsemide. In contrast, furosemide's half-life is prolonged in patients with renal dysfunction, therefore, special caution must be taken with this population. Both furosemide and torsemide's pharmacokinetics are not affected by hepatic dysfunction. However, with bumetanide, dosage adjustment in patients with hepatic disease is necessary because of bumetanide's prolonged half-life and duration of action (Table 3).

Conclusion

Torsemide, furosemide, and bumetanide are the three currently available loop diuretics that have similar efficacy. Torsemide, a new loop diuretic, is comparable to furosemide, but has a longer duration of action and more consistent bioavailability. When torsemide is given once daily, dosage adjustment is not necessary in patients with renal and hepatic dysfunction. Some data in clinical trials suggest that less kaliuresis is seen with the use of torsemide, and this could be a potential advantage over the other loop diuretics. However, more clinical trials are needed to document this claim.

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Tips and Tricks: The Hard Way—ABCs of Quadriplegia Care

STEWART A. KING, M.D.

The following are things I have learned, routines my nurses have brought to me, or that we have developed together during 11- years existence with amyotropic lateral sclerosis (ALS) eight of which have been burdened by ALS induced quadriplegia and ventilator dependence.

Items are listed, not in order of importance, which may vary from individual to individual, but alphabetically. Some are unique. Some commonplace. All are useful and many are of surprising value. Deviations from common understanding or practice are marked with an asterisk, and practices that can afford significant economies are double asterisked.

This is written in an attempt to share with others in the profession lessons I have learned from personal experience—the hard way.

Batteries

COMMONPLACE but worth mentioning: In addition to the one-hour internal battery, the wheelchair ventilator has a six-hour Gel cell battery attached. The bedside ventilator had a Sears marine battery which provided 24 hours of automatic power backup. Because of sometimes inappropriate maintenance, we switched to a smaller Gel cell backup but in doing so consciously settled for shorter battery life in order to continue to use the ventilator's internal battery charger.

Cascade Setting

If the setting of the ventilator circuit air humidifier heater (Cascade) is changed frequently in an attempt to maintain a constant temperature, the heaters will fail. Left constant at whatever setting works best for the patient, heater problems are rare.

STEWART A. KING, M.D., Darien.

**Circuit Change

Since tracheostomy stabilization (at six months), nondisposable ventilator tubing has been used. This has been changed, cleaned, and acetic acid (Vinegar) sterilized at weekly intervals without pulmonary complications in seven years (Fig. 1).

*Communication

Computer and Other Assistive Devices.—There is nothing unusual about the use of a computer or printer, speech synthesizer, or fax-modem to communicate. Physicians (frequently the prescribers) are for the most part underinformed about the technology available to assist or augment communication for those individuals with speech impairments.

Hear Our Voices, c/o Gordon Richmond in Unit 301, 55 Hanover Circle, Birmingham, Alabama, 35205-1718, should shortly be able to help by providing information about the currently available assistive devices.

The still unresolved problem of conflicting demands for conventional memory by Words+ Scanning Keyboard Emulator and other similar software programs should be eliminated soon with the newer operating systems (Windows95 and/or OS2) and software designed for use with these operating systems.

*Communication

Speech.—A Portex "Trach-Talk" tube and suction rather than positive pressure oxygen are used to enable speech. Advantages favoring suction speech are three, and are of major importance: 1) Using a switch and a remote, a

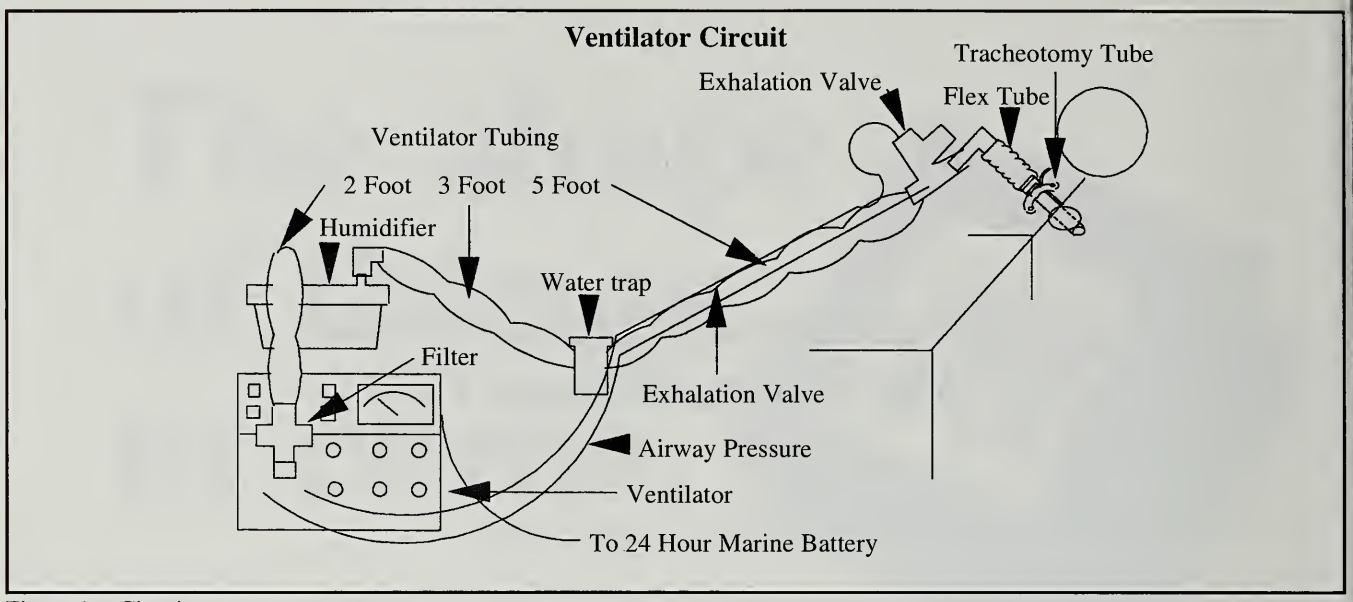

Figure 1.—Circuit.

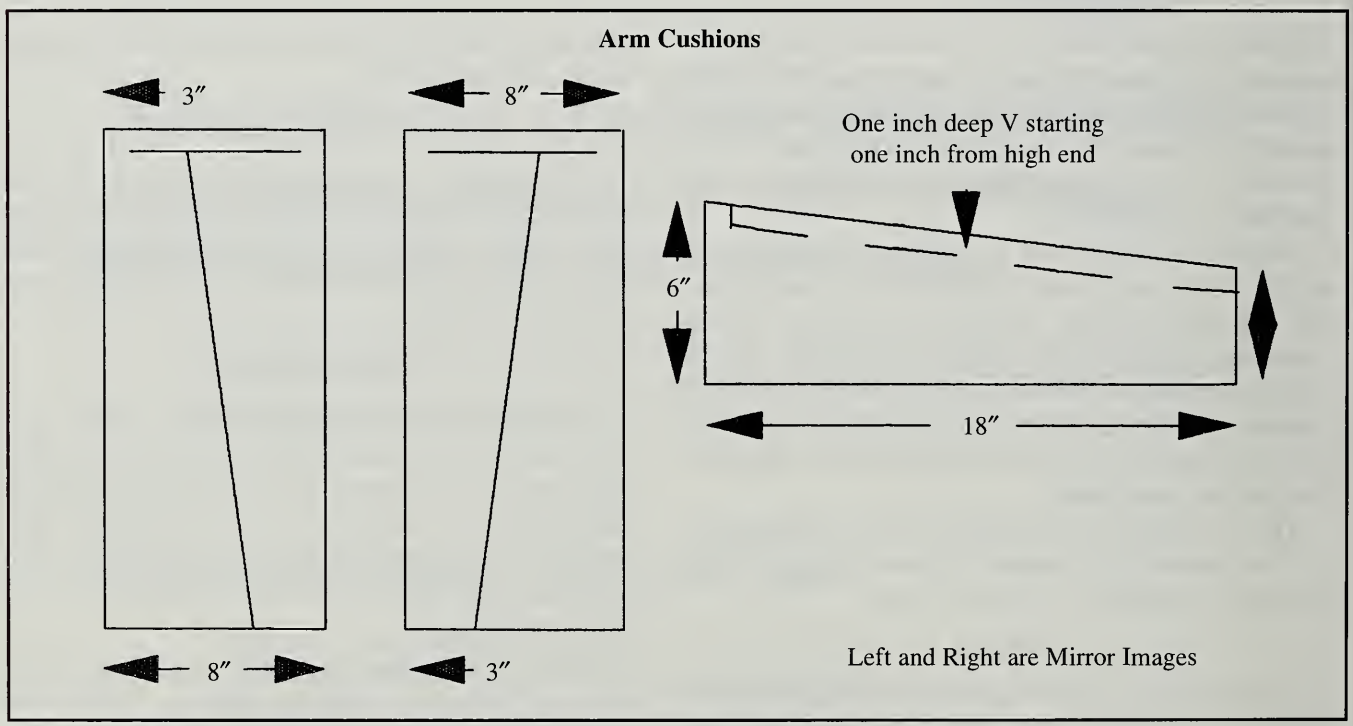

Figure 2.—Cushions.

quadriplegic can turn on a suction machine to speak. 2) Air drawn through the pharynx is moist, minimizing drying of the vocal cords, allowing more protracted speech. 3) Because the upper trachea doesn't dry, reactive trachorrhea requiring suctioning doesn't intrude.

Communication

Telephone.—A Plantronics double earpad headset reduces external noise, is amplified, and allows intelligible conversation if the back of the microphone is toward the suction machine. An extra phone on the house line allows a nurse to listen and interpret if necessary.

*Control—Psychological Importance

The quadriplegic's loss of control over the environment, let alone normal bodily functions, is supremely important. Restoration of some measure of self-esteem accompanies the installation of every device which extends the ability to utilize, for instance, suction for speech, the television, a call alarm, room lighting, the computer. These mechanical controls are of inestimable psychological value.

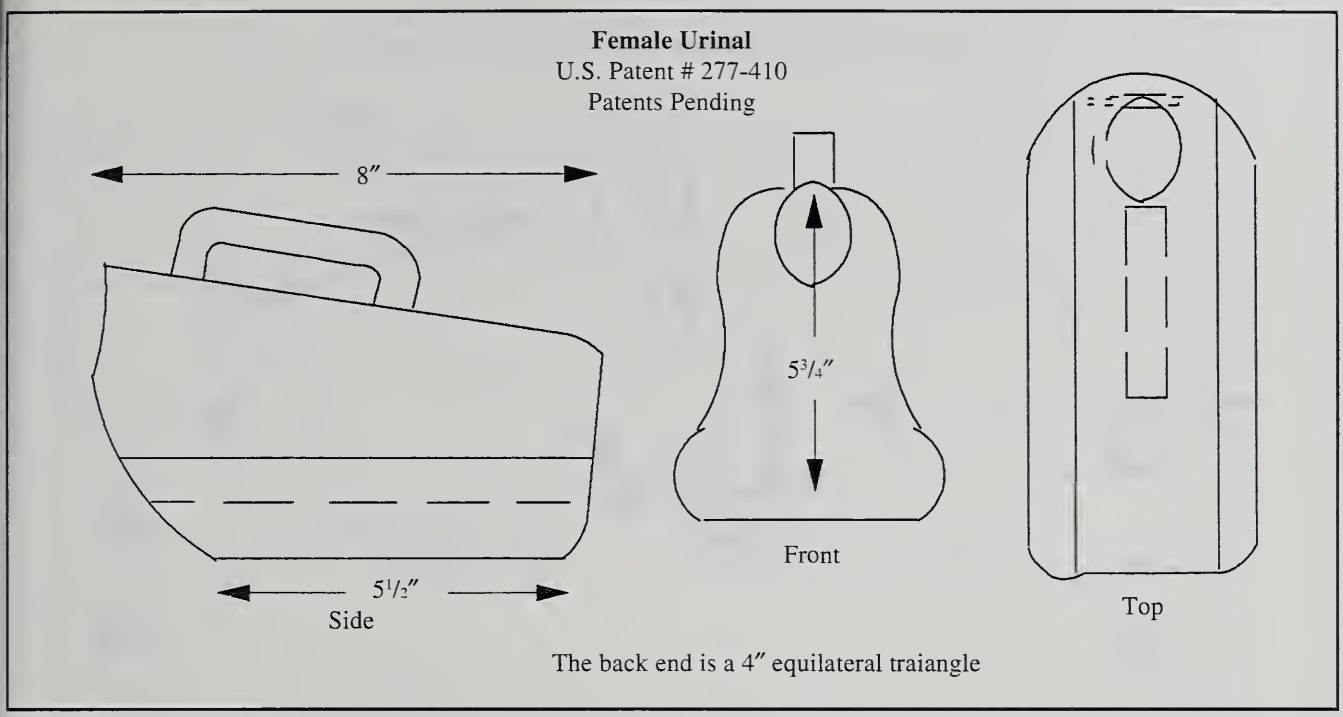

Figure 3.—Duck.

**Cushions—Arm and Leg

Any flat cushion or pillow under the legs, thick enough to elevate the heels off the bed, will suffice. The arm cushions can very easily be custom measured for length and height by a family member and made by a foam rubber shop quite inexpensively. Cut out the tops with an Exacto knife angling outward to cradle the arms and leave a lower rim to provide wrist dorsiflexion (the top cutouts should be mirror images) (Fig. 2).

*Diagrams

Frequently forgotten. In manuals incorporating diagrams, particularly those referring to operating systems, descriptive text preferably should share the page with the diagram, rarely be on a following page and never be on the reverse side of a page. Having to flip a page back and forth to understand and memorize the contents of a diagram is rediculous for the healthy but nearly impossible for the quadriplegic.

*Duck (Urinal)

The standard male urinal is terrible for use in bed! It isn't stable, and holds little urine without spilling. Any urinal with a flared bottom allows stabilization by the thighs and accommodates much greater volume down low where it can't spill. The female urinal designed by Rosalie Floyd of British Columbia is far better (Fig. 3).

Eating, Burping, Blowout

Difficulty swallowing is an expected consequence of both ALS and tracheostomy with a cuffed trach tube. Several things may help the patient who wants to eat. Position the patient as upright as possible. Angle the head and neck at whatever angle works best. Keep the head forward and the lower jaw down. Puree all foods in a blender, adding pureed potato buds or rice to thicken to whatever texture is best tolerated by the patient. Avoid over inflation of the trach tube cuff at mealtime. It intrudes on the upper esophagus. Supplement with water via G-tube and burp and, assuming "talker trach" tube, do blowout.

*Burping

Immediately upon finishing a meal, in a semirecumbent position, since the gastrostomy tube (Sandoz) is relatively flush and has a built-in antireflux valve, the cut-off barrel of a 12 cc syringe is inserted into the valve to catch fluids, followed by insertion of a blunt (filed) spinal needle through the syringe and through the valve to release gastric air. This is done whenever necessary. Fluid supplements and medications follow.

*Blowout

Aspiration of food is common in tracheotomized patients. After each meal, after the burp routine, with the head of the bed flat, the "talker" tube Christmas tree is attached to positive-pressure oxygen and the valve on the tank opened fully. The resultant blast of air drives aspi-

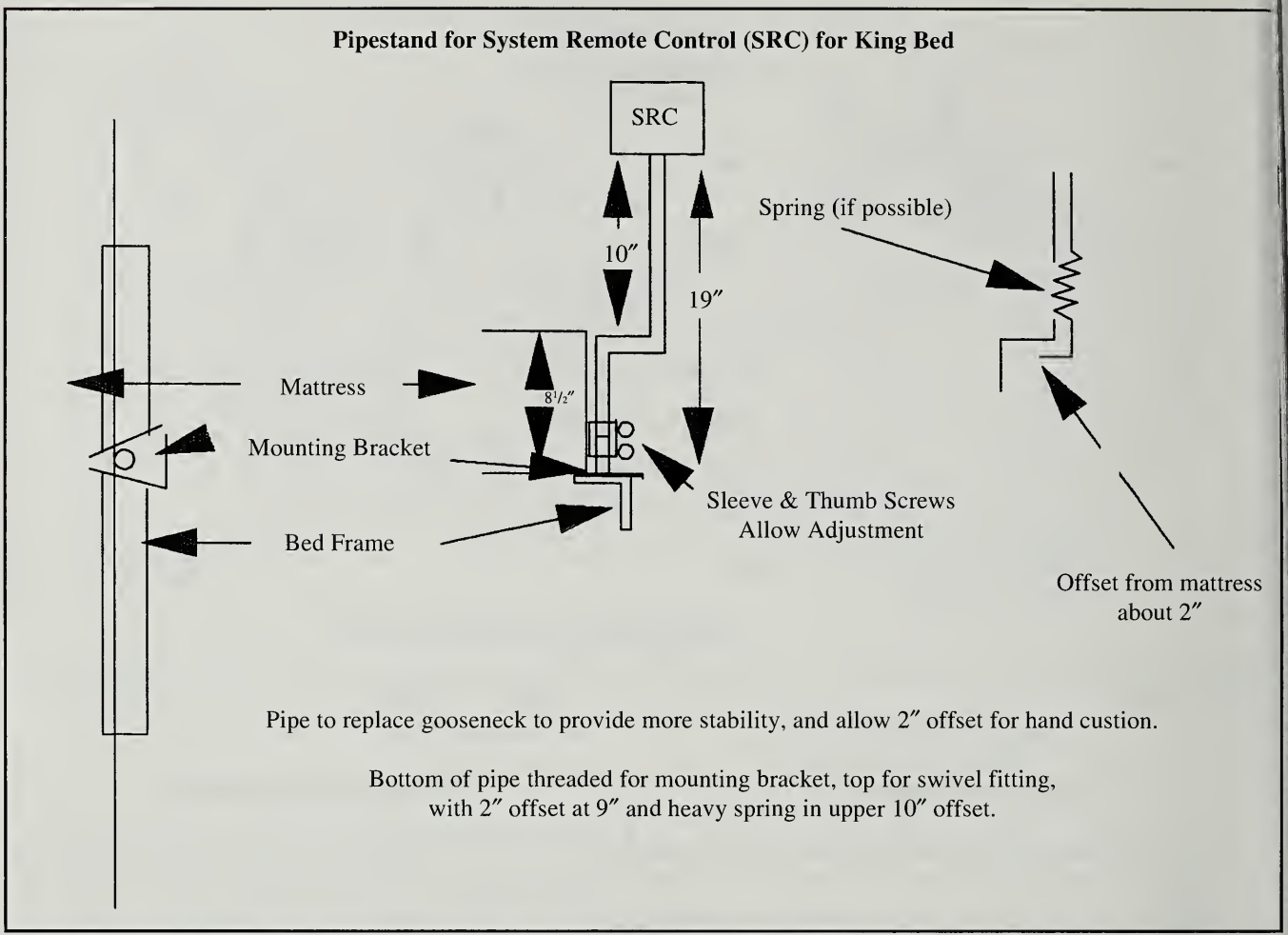

Figure 4.—SRC Support.

rated food back out of the upper trachea through the cords into the pharynx or mouth where it is further chewed and swallowed. The blowout may have to be repeated.

Equipment—Design and Position

On/Off control of call alarms, lights, the radio, etc., is achieved via a switching device deriving its energy from any muscle the patient is able voluntarily to contract. The switch is used to select and activate remote modules using a visible bedside mounted System Remote Control (SRC) deriving its power from a PowerHouse unit. While the head-of-the-bed mounted gooseneck for a tongue switch is reasonably durable, a gooseneck mount for the heavier SRC proved impractical and the enclosed design (with or without the spring) is more useful (Fig. 4 & 5 for design and placement).

**Equipment and Supplies—Purchases

For any patient whose condition has stabilized and whose indefinite survival seems assured, early purchase rather than continued leasing or deferral of purchase of equipment, some of which is vital, makes total economic sense. The one-year rental charges on ventilators are greater than the purchase price. Parenthetically, considerable savings could be achieved if consortiums of insurers and voluntary agencies were formed to accept donations of no longer needed durable medical equipment to maintain and reuse in loan closets.

Patients with progressive neurologic disease should seriously consider early purchase of a power wheelchair with adaptable controls rather than a three wheeler which loss-of hand strength will soon make useless.

A single admonition for supply purchases—Shop Around!

Exercises

Almost daily range-of-motion exercises by nurses for ankles, knees, hips, fingers, wrists, elbows, and shoulders, coupled with weekly visits by a physical therapist have successfully prevented contractures for eight years.

*Hoyer Slings

Any patient with any residual shoulder strength may find that use of a double sling (top and bottom) requires much less turning and positioning, hence is easier to use and more comfortable than is a single sling. Synthetics soil less readily and clean more easily than cotton.

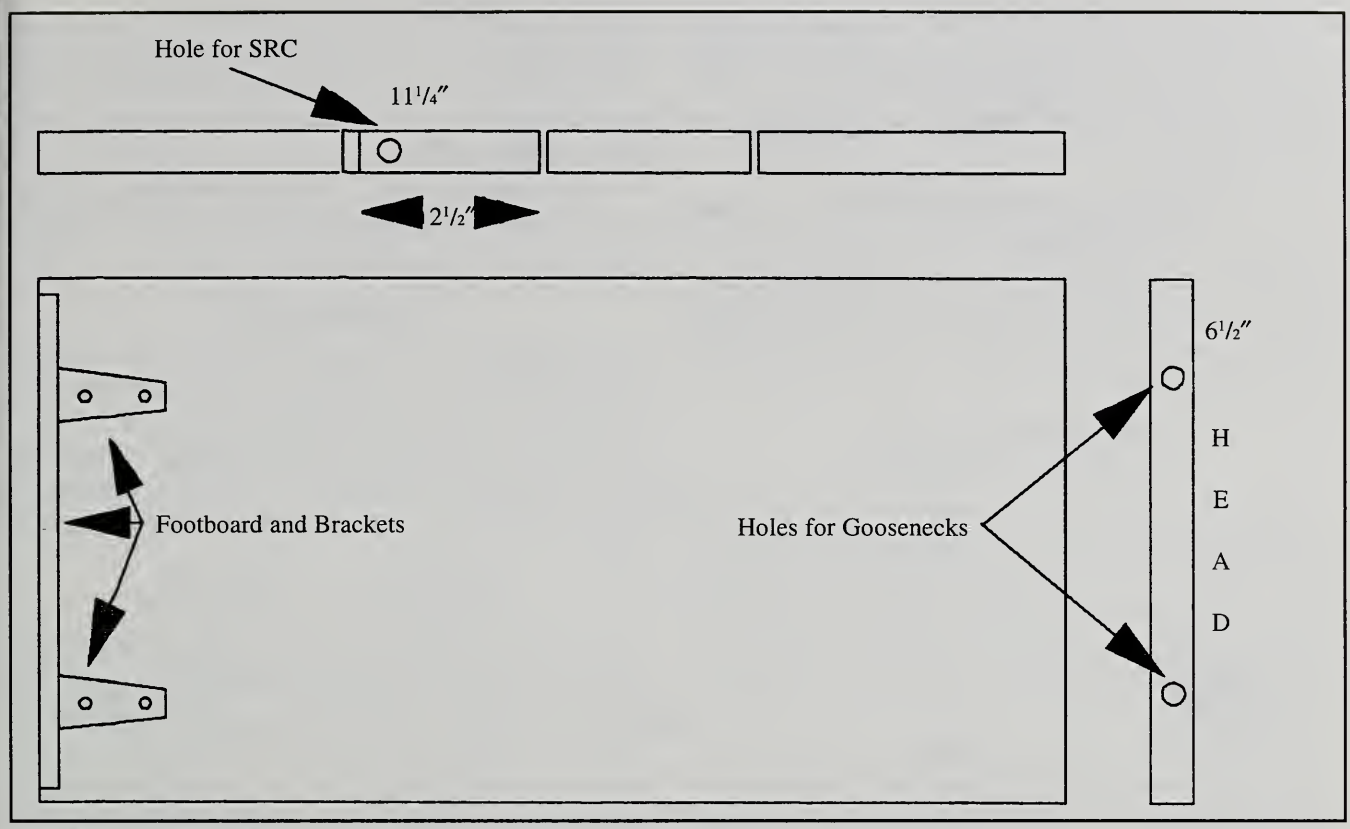

Figure 5.—SRC Placement.

The top sling will be more comfortable with 6" of synthetic sheepskin padding at either end, and the bottom sling is more stable if there is a reinforcing bar of nylon to keep it from telescoping on its metal side bars, thus narrowing the support base.

*Instructions—Written

Computer written, step-by-step, in frightening detail, they are best read, and then followed by reading along and doing each step of the more complicated routines (like the shower routine) until they are mastered.

An immediately recognizable way for patients to signal they are not getting enough air and the remedial steps to be taken—a No Air Protocol—is of vital importance! Connections come loose with shaking or movement and the disconnect may not be apparent to the attendant.

*Loop Tape Instructions—Verbal

If the patient's speech can no longer be understood, answering machine, continuous-loop tapes can be used to record (I used a Boom Box) a series of verbal care instructions. A quadriplegic who can control any single switch, by using a prerecorded menu of named tapes and starting and stopping any playback device at the desired tape name or message, can be afforded the ability to make his or her needs known to any caregiver.

Positioning

Body and shoulders are always positioned for access to a switching device. Position is changed as necessary for comfort by raising or lowering the head of the bed. I am advantaged over other quadriplegics in having no sensory deficit—those who have a sensory deficit will have to be moved in a more timed manner.

More precise and less abrasive than using the draw sheet, except when products such as Duo-Derm or Balmex are being used, positioning can be done using a "butt lift"—one arm under the small of the back and the other under the thighs at hip level, and then a lift and pull to one side or the other.

*Shower Chairs

Many, if not most, of the shower chairs marketed have either a solid or an oval seat. Save for safety for children or very small adults, these chairs are not ideal because access to the genitalia is limited by the solid front of the seat.

Removal of an hourglass segment from the front center of the fiberglass seat of a good E and J shower chair done with jigsaw, file, and sandpaper resulted in no loss of the chair's structural integrity and gross improvement in personal hygiene.

Showering with Tracheostomy

Tiring but well worthwhile. The wheelchair with its ventilator is simply pulled alongside the shower curtain with the vent tubing run through a slit and secured by tying around the neck. If space is tight, an alternative is the use of a 15-20 foot ventilator hose.

Skin and Stoma Care, Granulations, Pressure Sores

Skin Care.—After the shower (or the occasional whirlpool tub for pleasure, rather than therapy), after New Skin or Duo Derm if needed, a barrier cream—Bag Balm or Balmex—is applied to the sacrococcygeal area and wherever past breakdown has occurred. The cream reduces friction and affords some protection against the effects of incontinence.

The back and buttocks are powdered with corn starch to reduce friction and shear from the butt lift or sliding in bed. Gold Bond medicated powder dusted on the axillae and the groin seems to afford the most comfort.

Stoma Care:

[**]*Dressings.*—Once stoma stabilization has occurred, nonsterile gauze may be used safely. A package of 25 sterile Nu Gauze 4x4 tracheostomy dressings can cost about $6.00 while a package of 200 nonsterile 4x4's of the same material can be purchased for about the same price. More from habit than reason, Bactroban ointment is used on the trach stoma and Betadine gel around the G-tube.

[*]*Granulations.*—Granulation tissue around stomas has nerve endings. Granulations hurt! They should be cauterized flush with silver nitrate sticks and kept to a minimum.

[*]*Pressure Sores.*—While saline dressings are preferable for granulating wounds, and the validity of that recommendation in the national guidelines is unchallenged, wet dressings are impractical for the superficial erosions more frequently troublesome in the home setting.

For minor breakdown of the sacral area, a product called New Skin works well. Abrasions in that area, a product of shearing engendered mainly by sliding down in bed, generally heal in 48 to 72 hours with New Skin, and in twice that time without it. For anything deeper, thin Duo Derm is applied.

Prevention of decubiti is most important and, for prevention, a barrier cream seems effective.

Sleeping

Because feet and lower legs become engorged with dependency in the shower chair and/or the wheelchair leading to some concern about venous thrombosis, and because the position affords the least pressure on the sacrococcygeal area where (minor) skin breakdowns have occurred, positioning for sleep is with the head of the bed flat and the foot of the bed fully gatched—semi-Trendelenberg position.

An hour before sleep, to reduce secretions and minimize the need for suctioning during the night, 4 mgm of Chlortrimeton is given through the G-tube.

[**]Suctioning—Kits

In a stable home setting with an HIV negative patient, it is safe and definitely economical to use a single glove technique using Vinyl rather than Latex gloves and reusing a single kit for an entire eight-hour shift—impossible with Latex gloves. For this the kits from Superior Healthcare in Cumberland, Rhode Island, are preferred—Catalog # 37424.

[**]Suctioning, etc.—Techniques

With the availability of devices like the Peep-Keep adapter from Concord-Portex (now SIMS) in Keene, New Hampshire, hurried suctioning is neither necessary nor better for the patient. Slow to moderate speed suctioning on the way in as well as on the way out, without manipulation of the catheter, is more effective than the usual rapid, twisting, out only suctioning which is prevalent.

In addition to position changes, chest cupping, and occasional use of bronchodilators either by insufflation or as an aerosol (more effective), every morning tidal volume on the ventilator is increased from the usual 800 to 1300 cc for several minutes, and, to eliminate the high-pressure alarm, suctioning is through the tube, not the Peep-Keep. The heightened volume is quite efficacious in loosening secretions.

Because it is difficult to identify from which lung rhonchi emanate, in order to direct suctioning to the right or left, the nurses are often asked to examine the chest. Because it is quicker and easily learned, palpation is more readily and more frequently employed hence more useful than auscultation or percussion.

[*]Surge Boards

In addition to providing vital equipment some protection against electric power surges, these multiple outlet boards allow a multitude of appliances to be used. Since most are not used simultaneously and are of low wattage, overloading has not been a problem. Another advantage accrues if a generator is needed during a power outage since multiple appliances can be run off a single line from the generator.

Tracheostomy Care

In order to facilitate daily inner cannula changes, three cannulas are rotated through labeled specimen jars containing peroxide, alcohol, and sterile water. The two

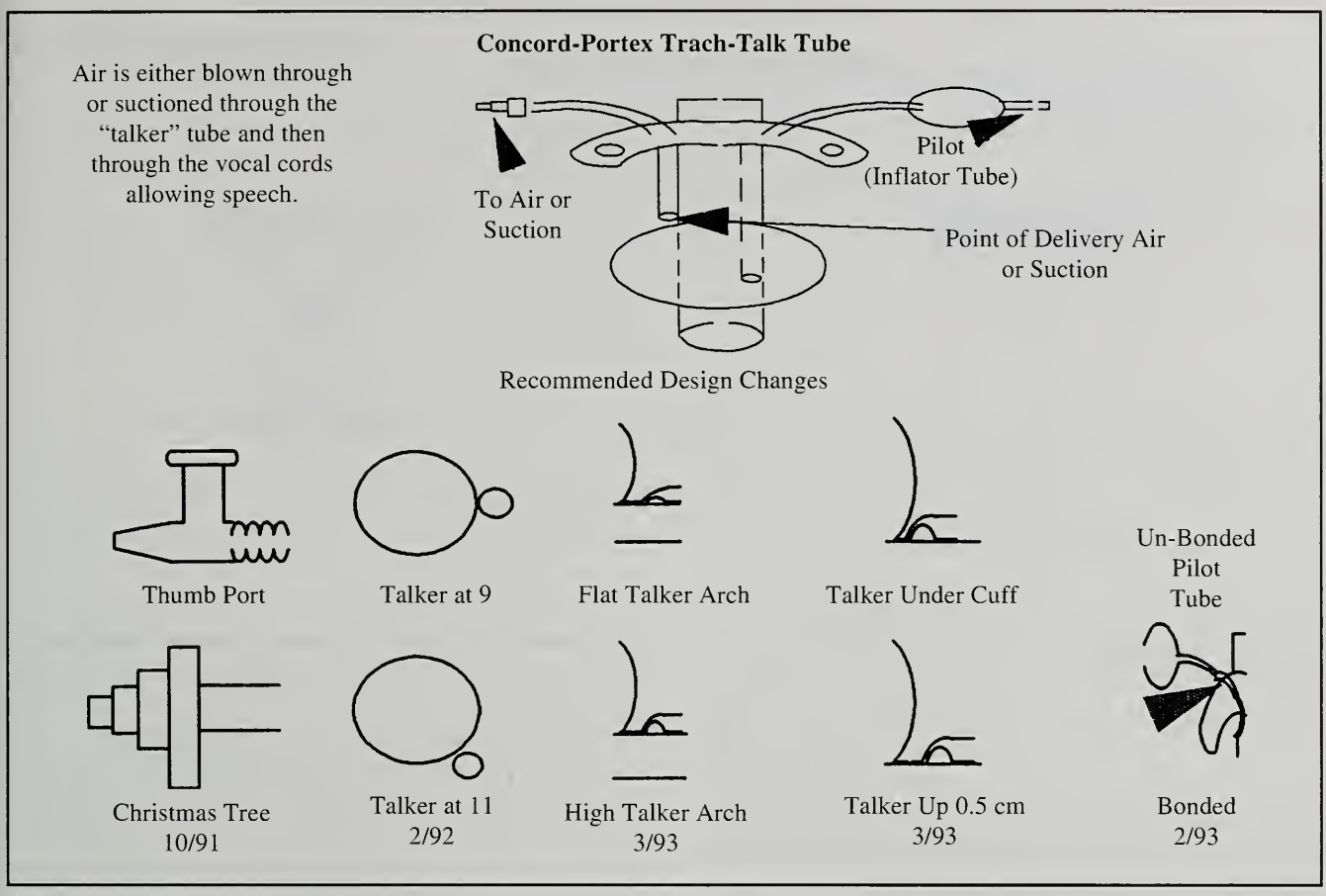

Figure 6.—Tube Innovations.

cannulas not in use are left in peroxide and alcohol respectively overnight and the rotation occurs at shower time with the cannula from the sterile water inserted in the tube after 15 minutes soaking. Solutions are changed twice a week.

**Tracheostomy Collars

The usual cotton twill ties used to secure a tracheostomy tube are impossible! They are narrow and cut, and are difficult to apply and adjust. The one-piece Velcro collars from Concord-Portex or the two-piece Dale collars are infinitely preferable. If they are rinsed, not washed with soap, and never twisted, the Velcro has a reasonable life expectancy. More expensive than twill but far better.

*Tracheostomy Tube Changes

From December 1987 when I underwent tracheostomy until February 1992, per manufacturer's instructions for these single-use tubes, tube changes were done at four to five week intervals first with the Communitrach tube until August 1991 and then with the Concord-Portex Trach-Talk tube through January 1992. Granulations persisted throughout this four-year period and tube changes by physicians were invariably bloody and uncomfortable.

Early in 1992 a tube change protocol was written and weekly changes by my nurses were begun. Within a month granulations were gone and tube changes became easy and comfortable. Two tubes are now rotated every two weeks with easier changes, no bleeding, little plugging of the inner opening, no odor, and better speech. Once a tracheostomy has stabilized (three to six months), frequent tube changes will facilitate stomal healing.

*Tube Innovations

At my request, Concord-Portex substituted a Christmas tree for the original thumb port suction adapter, provided tubes with a larger (higher arched) inner talker opening, bonded the pilot (cuff inflator) tube to the flange of the collar, and, by trial and error, moved the open inner end of the "talker" tube up a half centimeter, and from the nine to the 11 o'clock position on the shell (Fig. 6).

The Christmas tree, the high arch of the inner talker opening, and the bonding of the pilot tube should benefit all patients who use the tube not only for speech but, of equal importance, for emptying the upper trachea. The other changes—the 11 o'clock position and positioning the inner opening a half-centimeter closer to the cords—may not be universally as beneficial as they have been for me.

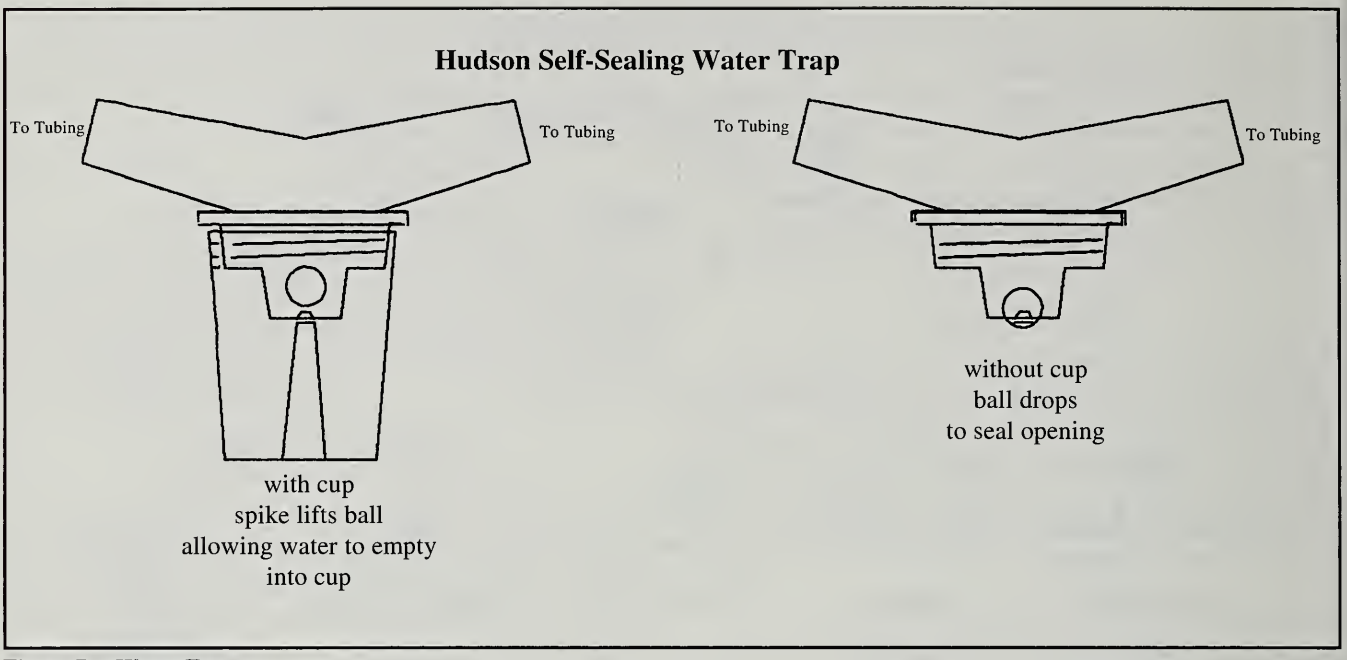

Figure 7.—Water Trap.

*Turning

All too frequently, if patients are to be turned on their sides, personnel will attempt to turn the patient with traction on an arm and leg. Because of the quadriplegic's muscle loss, this places all the pull on unsupported ligaments with an attendant risk of pain and dislocation. The practice is thoughtless and should be inveighed against! Patients should be turned with traction only on the hip and upper thorax, never on an extremity!

Vasomotor Reactions

While much has been made of the more serious vasomotor responses that afflict the paraplegic or quadriplegic patient, the more frequent minor reflex reactions command little attention. If the patient's face feels flushed and the mouth dry and acrid, there is something going on. A full colon or bladder, poorly perceived cramps (and impending diarrhea), or any number of other sources of subliminal pain, may be triggering a quite uncomfortable reflex vasomotor response. The response (autonomic dysreflexia) is a harbinger of problems.

**Water—Sterilizing

Sterile distilled water is needed for the humidifier (Cascade) on the ventilator. It is also used in place of saline to suction through the catheter and tubing to cleanse them. The lowest price obtained for commercial sterile distilled water was $7.00 a liter. Distilled water is readily available for about $7.00 for six gallons and is then boiled (with the right size containers, a microwave can be used) for about a 20/1 saving.

Water Trap

With the use of a ventilator humidifier, water will condense in the ventilator tubing. Addition of a self-sealing, in-line water trap maintained in a level and dependent position is a must! Without one, the highly audible gurgle as water collects in the tubing is a repetitive annoyance during the day but seriously interferes with sleep at night.

The trap may still need to be emptied hourly (Fig. 7).

Commentary

Postscript to the Legislative Session

Elsewhere in this issue of *Connecticut Medicine* (377) is my closing presidential address to the CSMS House of Delegates. Given just prior to the end of this year's legislative session, I was hopeful that much of our proposed Patient Protection Act would soon become law.

Unfortunately, this was not the case. Despite overwhelming support from both the House and the Senate, managed-care reform fell victim to political maneuvering. Just what happened depends on whom you ask. While each chamber had separate bills which the other would not accept, in the final hours representatives from both chambers did negotiate a compromise bill. The House unanimously passed this bill just an hour before the session ended. But the Senate, blaming the late hour, chose not to bring the bill to a vote. Instead, it passed limited legislation to prohibit drive-through deliveries and to improve insurance coverage for survivors of breast cancer.

Whatever the reason for the Senate's failure to act, the sad fact remains that managed-care regulation was favored by the vast majority of our lawmakers. They are well aware of the need for full disclosure of covered benefits, improved access to emergency services, and an end to the gag rule. CSMS had delivered its message clearly, and even in hind-sight, I think our legislative strategy was on target. We were simply beaten by the political process. We hope this past year's efforts will help us be more successful in the 1997 session. But until then, we can claim no victory.

It is important for all our members to be aware of those who worked diligently for our cause. Specifically, I would like to thank in the House, Rep. Anne MacDonald. As co-chair of Public Health Committee, she fought tirelessly for an effective managed care bill and shares our disappointment in its failure. Also in the House, Rep. Jim Amann, co-chair of the Insurance Committee, and Rep. Moira Lyons, the Majority leader, did their best to pass this legislation. In the Senate, Doc Gunther also gave the PPA strong support, and Bill Aniscovitch tried in vain to broker the compromise bill.

I hope the Senate leadership will take a lesson from New York Republican Govenor Pitaki, not known for his love of governmental regulation, has forged a PPA bill quite similar to ours for his own legislature to consider. Perhaps if Governor Rowland, whose administration heard our petitions right up to the final days of the session, provides similar leadership next year, the outcome may be different.

As past president of CSMS, I had planned a minor role for myself in the coming year. But with the failure of our major legislative goal, I will not so quickly move to the sideline. Under the direction of President Deren and the Legislative Committee, I will again be a presence in Hartford. All of us must support our legislative allies in their fall elections, and we must hold accountable those unwilling to act for their constituents' well being.

Dickerman Hollister, Jr.. M.D.
Past President

50 Years Ago
From *The Connecticut State Medical Journal*
June 1946

Editorials

It Could Happen Here!

The House of Commons on May 2, 1946 approved the second reading of the national health service bill by 359 votes to 172. By this decision Great Britain is to have a system of socialized medicine beginning at the end of next year, with all medical services free of charge to the public, hospital services, administered and financed by the government, and doctors' fees and salaries paid by the government. At the same time this legislative body was in session the British Medical Association passed numerous resolutions condemning the bill, with only five of the 300 delegates at the meeting supporting a motion to approve the general framework of the bill. However, the bill is said to have the support of the Socialist Medical Association, an organization which presumably will occupy a significant place in the future developments of government medicine in Great Britain. The lesson to be learned from these facts found in the daily press and the implementing of this radical social legislation will be viewed by American physicians with great interest as well as apprehension. That the general quality of medical care will suffer is inevitable, for in our own country in practically every instance where efforts have been made to administer government medicine to large masses of people this has happened. An instance of this appears in other columns where Dr. Burlingame points out the deficiencies of a century of state medicine in the field of psychiatry. What has recently happened in Great Britain could happen in our own land, and it will only be prevented when a truthfully informed public demands that legislation involving social structures be undertaken only under the wisest advice that it is possible for our lawmakers to obtain.

Reprinted from the *Connecticut State Medical Journal*, June 1946.

The Committee on Public Relations of our Society recognizes and emphasizes that the best relationships between the public and the profession are those created by the individual practicing physician, a commonplace fact often forgotten because of its self evidence. It is he who must continually be alert to inform the public through every proper means concerning the risks and fallacies inherent in the practice of medicine administered by governmental agency. The strong sentiment expressed in the recent meeting of our House of Delegates in favor of the Society's availing itself of more expert advice in developing a public relations program demonstrates to our officers their responsibilities in this field, a pronouncement which they have earnestly sought. In support of this expanding enterprise, each of us must have trust in their guidance and an unfailing faith in ourselves. In the patient-physician relationships which we are daily developing our actions often speak louder than our words, and we can be confident that these relationships will be developed to their fullest advantage if we seek to remember the recent words of Father Schwitalla, spoken at Hartford: "The physician must be a man of truth, of sincerity, of simplicity of mind, of determination, of conviction, these qualities become frankly and obstrusively obvious as one attempts to understand the functioning of the physician in relation to his patients. That relationship demands a scientific competence and skill but it demands also qualities of heart and soul, qualities of character which only a physician who has an appreciation of the wide significance of his obligations, can understand or demand of himself."

Socialized Medicine

Dr. C. Charles Burlingame of Hartford in his annual report to the Board of Directors of the Institute of Living points out that the field of psychiatry might be held up as

an example of the results obtained through political handling of medical care. Dr. Burlingame states:

"Currently, there is a nationwide debate on the question of political or socialized medicine versus free enterprise in American medicine. The champions of political medicine have a great deal of government support, but at long last, the American Medical Association has come forward with an affirmative program designed to solve some of the difficulties, instead of continuing in its original role of opposing proposed measures while offering nothing affirmative in their stead.

"In relation to the controversy, the field of psychiatry occupies a unique position. Psychiatry itself, which grew out of the jails and the poorhouses, can scarcely be said to have quite as respectable an ancestry as other branches of medicine, which have progressed under the aegis of free enterprise in American medicine. Without receipt of public sympathy and private philanthropy, 95 per cent of the practice of psychiatry has been state medicine for over a hundred years.

"As a matter of fact, free enterprise might well question itself as to whether it has shirked its obligations by sloughing off the care of the mentally ill and allowing psychiatry to get into the present day state of affairs through political medicine.

"There have been some good things and some reasonably good state institutions, but if we take the country as a whole, it is safe to say that only a small fraction of present day knowledge in psychiatry is made available to the greater percentage of the patients in the six hundred thousand hospital beds already dedicated to the mentally ill of America. In some parts of the country, these victims of political medicine are probably not even receiving good board and room, to say nothing of scientific treatment.

"The lack of progress in this example of political medicine is appalling, and to compare the average care of the mentally ill in this country with any other part of the world does not eradicate the public disgrace of the overall picture.

"The public should call for an up-to-date assay of results in psychiatry, and should think long and carefully before plunging headlong into anything that even resembles political handling of the other branches of medical care. Let the people demand first that the responsibility already assumed in psychiatry by State and political medicine be satisfactorily answered. Let the people demand that the ability of State medicine be demonstrated in its present responsibilities before going farther along the road toward political handling of medical care."

Miecrylow (Michael) M. Deren, M.D.
PRESIDENT

MIECRYLOW (MICHAEL) M. DEREN, M.D.

Education:

1962-1966 B.A., English Literature—Georgetown University, College of Arts & Sciences
1966-1970 M.D., Medicine—Georgetown University School of Medicine
1970-1972 Residency, General Surgery—Hartford Hospital
1974-1976 Residency, General Surgery—Hartford Hospital
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Military Service:

1972-1973 Lieutenant, USNR, Fleet Marine Force, Third Marine Division, U.S. Marine Corps, Okinawa, Japan, *Battalion Surgeon*
1973-1974 Lt. Commander, USNR, U.S. Naval Hospital, Puget Sound Naval Shipyard, Bremerton, WA, *General Medical Officer*

Academic Appointments:

1975-1976 Instructor in Surgery, University of Connecticut, as Chief Resident in Surgery, Hartford Hospital
1977-1978 Instructor in Surgery, Yale University, as Chief Resident in Cardiothoracic Surgery, Yale-New Haven Hospital

Positions Held:

1978- Senior Surgeon, Thoracic, Vascular, and General Surgery, Lawrence & Memorial Hospital, New London
1979- Senior Surgeon, Thoracic Surgery, William W. Backus Hospital, Norwich
1980-1995 Consultant, Thoracic Surgery, Uncas on Thames Hospital, Norwich
1983- Consultant, Thoracic Surgery, Norwich State Hospital, Norwich
1984- Staff Surgeon, Thoracic and Vascular Surgery, Westerly Hospital, Westerly, R.I.

Research Experience:

1967 Georgetown University School of Medicine, Department of Physiology, *Analysis of Gaucher Spleens and Nelmann-Pick Livers,* Mortimer Lorber, M.D.
1970 Yale University School of Medicine, Department of Cardiothoracic Surgery, *Distal Pulmonary Artery Shunts, Atrial Septal Defects, Lung Scanning Following Caval Pulmonary Artery Shunts,* William W.L. Glenn, M.D.
1972 Hartford Hospital, Department of Surgery, *Aortic Grafting in Contaminated Abdomens: Liver and Kidney Transplantation,* Robert Schweitzer, M.D.

Medical Licensure:

1971 State of Connecticut
1973 State of Washington
1983 State of Rhode Island

Board Certification:

1971 National Board of Medical Examiners
1979 American Board of Surgery
1989 Recertified
1983 American Board of Thoracic Surgery
1994 American Board of Quality Assurance & Utilization Review Physicians

Fellowships:

1983 American College of Chest Physicians
1983 International College of Surgeons
1984 American College of Surgeons

Societies:

1978 American Medical Association
1978 Connecticut State Medical Society
1978 New London County Medical Society
1982 Society of Critical Care Medicine
1983 Connecticut Society of American Board of Surgeons
1983 American Heart Association Council on Cardiovascular Surgery
1983 Pan Pacific Surgical Association
1983 American Thoracic Society Section on Critical Care
1983 American Lung Association
1984 Connecticut Thoracic Society
1984 American Society of Abdominal Surgeons
1984 American Cancer Society
1985 American College Chest Physicians Council on Critical Care
1985 Connecticut Chapter American College of Surgeons
1991 Society of Thoracic Surgeons
1992 New London County Historical Society
1992 Physicians' Association of New Haven County
1994 New England Surgical Society
1995 American Society of General Surgeons

THE PRESIDENT'S PAGE

The New Medicine

In 1792 the Connecticut State Medical Society was founded on the principle of quality of care, scientifically applied. When the American Medical Association was founded in 1847, the first order of business was to develop ethical standards of care. In the new medical environment we must hold true to these traditions of quality care, ethically applied, in the face of threats to them.

In the movie *Patton*, George C. Scott strode up in front of an enormous American flag and said, "The object of war is not to die for your country; the object of war is to make some other son of a bitch die for his county." We must insure that physician independence and the doctor-patient relationship survive. We must be certain the threats to freedom of choice perish. We must be sure the threats to ethical, quality care die.

We can respond to these threats by understanding them. There are two things which for-profit managed care does much better than traditional forms of insurance. The first one is that it diverts more money from patient services into corporate profits than any other system of health insurance. Many HMOs increase their bottom line profit by reducing the number and quality of patient services. Who here has not heard of their interference in patient care? Just telephone to get approval for a needed procedure—the number to call is 1-800-DENIED. The bottom line is the profit, not the patient. Cost is the over-riding concern. The motto: The cheapest patient is a dead patient. After all, the ultimate medical economy is death.

The second thing for-profit managed care does better than other systems is that it causes more problems among physicians due to competition and deselection. It pits doctor against doctor, hospital against hospital to the detriment of the patient.

Patient choice is the Achilles' heel of managed care and is one answer. Patients must be able to choose physicians freely. The Connecticut State Medical Society has supported this continually and well at all levels including the legislative, but the effort must have the help of all physicians, of all types, generalists and specialists, and all counties, all working together. Managed care per se is not the enemy and medical profits are not necessarily evil, but put them together and some legislation is necessary.

Medical legislation is, however, a double-edged sword. Laws designed to control HMOs, as with the drive through delivery legislation, may also restrict physician autonomy. We should not expect too much from the legislature. What we work so hard for in Hartford frequently becomes only half realized. All too often the political rhetoric is there, the performance is not.

Two notable exceptions are the Optometry Bill and the Managed Care Bill. The Optometry Bill was an attempt at the most radical increase in the scope of practice legislation in the country. The entire national optometric industry focused its efforts on Connecticut, flying in optometrists from all over the U.S. to testify in Hartford and spending enormously. Yet the Connecticut State Medical Society and the Connecticut Eye Physicians working together severely limited this Goliath effort. The power of unity is awesome.

The Managed Care Bill was opposed by the media, every industry, and every insurance company in the state, representing billions of dollars in assets. Those in favor were only the CSMS physicians and their patients, working with legislators. Due to the efforts of the CSMS and others, a Managed Care Reform Bill passed both the Connecticut House and Senate by overwhelming majorities, but unfortunately failed because of the Senate's inability to compromise on the language of the bill.

Another answer to the threat of good patient care is that not only must physicians be patient advocates but that patients must know this. One way to accomplish this is to have principles of care so that patients know what doctors stand for. These should be based on these assertions:

1. We will place the patient first.
2. We will place financial considerations second, and
3. We will advocate at the risk of deselection.

A final response is to articulate that providing health care is a moral enterprise. Extreme forms of managed care strain medical ethics to near their breaking point. There are those who feel that for-profit managed care does not support human dignity, the common good, nor social justice, and it exposes patients to risk. If harm comes to our patients as a result

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Incoming President's Inaugural Address—House of Delegates, 8 May 1996

of mismanaged care, the physician is undeniably a moral accomplice. It is our duty to take control to prevent this.

Managed care enthusiasts insist that it has controlled medical costs, much of that coming from decreased hospital length-of-stays. Nowhere is credit given to new medical technology which, for example, has reduced the hospitalization of cholecystectomy patients from five days to same-day surgery by laparoscopic techniques. New anesthetics developed by the pharmaceutical industry, new operative and anesthesia techniques taught in medical schools and their teaching hospitals have also decreased the length of stay. Insurance company apologists never mention the contribution of medical research and new forms of physician care in lowering hospital stays. Doctors and nurses have also lowered medical costs by giving more efficient care. Their reward is a cut in salary. The medical profession should share in the benefits of lower costs as it is responsible for many of them.

For-profit managed-care plans pay only for the care given. They do not pay for the vast medical infrastructure which was paid for by traditional forms of insurance. Managed-care plans do not pay for medical education, research, or indigent care. They don't even want to pay for the care of sick patients. I could operate a health-care insurance company for healthy people. Just cherry pick the patients, and deny care when they are sick.

Managed-care administrative costs have risen astronomically. The number of managerial employees in hospitals rose from 129,000 in 1968 to over one million in 1993, with much of the increase due to managed-care programs' requirements to ration care through utilization review. Who here has not witnessed hospital layoffs? Now staff and physicians are to work harder for less, while managed-care profits soar. It is obvious that patient-care dollars have been shifted from providers, doctors, and hospitals to stock holders and administrators. Some administrators receive millions of dollars per year in salary, yet never see a patient.

We must take back the control of medical care, including managed care. Otherwise the only thing left for us will be to work, consume, be quiet, die, and be composted.

Putting First Things First

Make no mistake about it: neither the CSMS nor I are opposed to for-profit managed care. It is here and here to stay. But it should not be and will not be the only form of health-care insurance, and we must evaluate and oversee it. We cannot accept it uncritically; we must scrutinize it, find its good points, and minimize its bad ones.

It has been said that the trouble with the younger generation is that it has not read the minutes of the last meeting. Managed care is not new. The Royal Infirmary in Edinburgh was founded in 1730 on principles very much like managed care. It was owned by a group of Lords and it was run by lay managers. In order to receive care, a patient had first to get a ticket of recommendation from one of the lay owners. Patients were denied care if it looked as if they would die too soon. The Lords after all, didn't want their doctors to have a bad reputation. This is an example of early market segmentation and denial for preexisting conditions. Realizing that pregnant women could be cared for easily with new techniques, they fought over those patients, an example of getting market share. Only certain physicians could practice in the infirmary. Sound familiar? The infirmary lasted less than 30 years and was ultimately a failure. Medical ethics were contaminated by self interest and profit motivation. The privy was too close to the well.

There are differences in care throughout the world and what works in one country will not work in another because of differing cultural backgrounds. For example, our views of death differ. It has been said that the English consider death as imminent, the Canadians consider it as coming, and the Americans consider it as optional.

Health care in America and Connecticut will change as our patients' needs change and as we direct it. Managed care is also continuously evolving. The next evolutionary step may be the most important to date. That step will occur when physicians take control, by joining together and forming risk-taking groups. We physicians will then become the managed-care companies. That is where the sticking point comes. Then the crisis confronting us will not be in the stars or in the HMOs but in ourselves. Every criticism we have made against managed care will then be applied to our own physician risk groups. The time will then come when we will have to walk the talk.

It will be far better to have a risk-sharing physician group delivering the care than some impersonal for-profit HMO, since physicians know what, how, when, and where care should be given and when to deny it, especially when the physicians are present and practicing in the community. Adhering to our principles of care and following our ethical traditions will then be a *sine qua non*. A good physician managed-care company will realize that providing health care is a moral enterprise, something neglected in some HMOs of today.

A physician-driven risk-sharing group must return to the principles that the patient is first, the physician-patient relationship is the cornerstone of care, and that the delivery system must be care-driven and not cost-driven. The gold standards are: first, the patient's interest and, second, the fact that medical ethics should never be divorced from health-care delivery. There are those who feel that managed care is an oxymoron since "managed" implies rigidity and "care"

implies flexibility. Only physicians can bring them together and only when the Art and Science of Medicine predominate over the Business of Medicine.

There are many steps to take before physician groups can directly contract with payors and enter the world of the new medicine. Help is needed. As in previous crises, the Connecticut State Medical Society will be there with assistance. Member physicians will need the tools, information, and strategies to complete successfully and take care of patients in the new environment, enabling them to exercise the options that are available to them when confronting the changes in the health-care revolution. These options include continuing in solo practice, forming larger groups, hiring practice management consultants to evaluate merging practices, forming physician organizations, integrating with managed-care organizations, and even working for managed-care organizations. The new medicine is upon us and under managed care physicians are facing new realities and new rules that require new responses. This is especially true in direct contracting.

One new reality is that fee-for-service and traditional forms of insurance will be minimal players in the new medicine. The vast majority of patients will be in organized networks of physicians, hospitals, and managed-care organizations. The new rules dictate a new vision of care that requires giving the right patient the right amount of care, at the right time, in the best setting, and by the appropriate physician. The new responses which doctors must develop are new forms of physician reimbursement, new practice arrangements, capitalization of new organizing entities for doing better in the marketplace, and for negotiating fees, contracts, and partnerships. All of this must be within our traditional sphere of medical ethics.

Currently more than 70% of U.S. workers are in some form of managed-care program and in spite of the many shortcomings of managed care, managed care has, with the much unheralded assistance of medical technology and physician input, stabilized the general health inflation rate.

Managed care is coming under increased scrutiny and criticism by the general population. Numerous articles have been recently published in the medical literature, making the point that managed-care companies, which tend to punish physicians for being patient advocates by deselecting them, only lead doctors to defend more fiercely their patients and their right to quality health care. The defense of patients must continue when physicians contract directly.

Physicians are and should be advocates for their patients; it is our duty to join patients in obtaining the very best quality care. It is the duty of physicians to expose the abuses of managed care not only to the patients but to the employers that are paying for this care even when it is the physicians' own company. We should educate patients, employers, and the media, as well as politicians in these areas, otherwise it will be the blind leading those who can see. Physicians themselves must recognize that there are new realities, new rules, and new responses which must be developed.

The Connecticut State Medical Society must boldly empower physicians to face these new realities, must inform them of the new rules and the changes that are involved in the organization, and most importantly must give physicians the information that they need in order to respond to these changes. All of these changes require definitive actions. If one does not respond to the marketplace he or she is simply out of a job. One must change or die. Resourcefulness in the face of size and power recalls the words of Mao Tse-tung to his guerrillas. Mao Tse-tung led a small force against the overwhelming army of Chiang Kai-Shek. He said, "When the enemy advances, we retreat. When the enemy retreats, we advance. When the enemy encamps, we harass." Because managed care entities and HMOs have accumulated hundreds of billions of dollars is no reason why we should not take heed and continue to fight this battle. We are advocates for our patients. Our cause is just and we will succeed.

Agenda for Change

Some of the challenges ahead in the Revolution of the New Medicine have been briefly outlined. An agenda for change is needed to respond to this Revolution. My agenda as your incoming president is simple and involves three facets:

1. UNITE 2. ENABLE 3. CHANGE

UNITE. Physicians must stand together. As we all know, physicians lack the collaborative gene. In spite of this, differences must be set aside. Frank and honest discussion, understanding, and resolution are important.

It is time to revisit specialty society representation in the CSMS. Such representation will strengthen collaboration and avoid misunderstandings before they occur, helping to present a unified force in the state.

Membership is at an all time high in the CSMS, something which we should be proud of, but not take for granted. The Organized Medical Staff Section of the AMA should be reinvigorated with a physician from each Connecticut hospital and organized medical staff.

(continued next page)

Planning to further advance our communications with other health-care groups should be undertaken. Meeting with other health-care professionals and perhaps renewing our relationship with the Connecticut Hospital Association on areas of mutual interest should be considered in spite of past differences. Our strategy should be one of constructive engagement.

A formation of a consortium, a new Connecticut Healthcare Consortium, dealing with managed care and other areas would unite disparate state groups into one house to discuss differences as well as common interests. Forming a patient advocacy group, having a patient 1-800 managed-care complaint hot line, and allying with citizens' groups, things that the CSMS has done before, should be formalized and strengthened.

ENABLE. Physicians must control, regulate, and take back the care of patients by taking over managed care.

We need intensified efforts in the political area, including more grass roots politicking by all of us. It is time for us to consider targeting a political candidate for deselection. Bringing the entire combined strength of the CSMS and county associations to bear on a political candidate should be considered.

The PAC, the PAC, the PAC. We have about 600 PAC members out of 6,800 total members—better than any other New England State Society, but nowhere near enough. Certainly our successful fight against optometrists warrants the COMPAC membership of every ophthalmologist. Which specialty's turn will it be next year? The road to political success runs through every physician's office.

Physicians can look to the CSMS as they have in the past for leadership and help in education and in getting the tools, information, and strategies needed to be successful in the New Medicine.

CHANGE. We need to make every effort to increase and diversify the membership with more women, minorities, and young physicians. All must be welcomed. We need experience and wisdom as well as young blood.

We can enlist allies by working with all groups having a shared common interest and change our attitude toward them.

There is no doubt the tide is turning and the health-care revolution is going in our direction. There is cause for optimism. As with any revolution we must think boldly and then act boldly, remembering that a successful past can blind us to new ideas.

None of us is as smart as all of us. Nothing can be accomplished without the unity, the help, and the cooperation of every physician here and in the state. I ask all of you for that help. I ask that we set aside our differences both between individuals and between counties and that we work for the common good. By working together I promise you, we shall succeed.

Thank You.

Michael M. Deren, M.D.
President

Saving Sight While Hitting the Links

How can you get up to $500 worth of golf for only $35? The Golf Fore Sight Card from Prevent Blindness gives you one free round of golf at each of 30 participating courses throughout New England for only $35 (course restrictions apply). If you paid for everything that's offered through this card, you would pay up to $500!

You can save even more money by getting together a foursome and purchasing four cards for $100. As a foursome you save $40 on the cards and up to $2,000 in greens fees! You can't beat savings this great! With the Golf Fore Sight Card, sponsored by Deloitte & Touche, you save money, play a variety of courses, and help save sight. The $35 purchase helps to fund the free eye health and safety programs of Prevent Blindness America and its New England affiliates. The Connecticut affiliate is coordinating card sales.

To purchase a Golf Fore Sight Card, call Prevent Blindness at (203) 347-2020 (Mastercard, Visa, American Express accepted) or send a check for $35 per card or $100 for 4 cards to Prevent Blindness Connecticut, 1275 Washington Street, Middletown, CT 06457. If you're taking advantage of the four-card discount, you must include the names and addresses of all players. Once you receive your Golf Fore Sight Card in the mail, all you have to do is present it at a participating course and play your free round of golf! The card lists the courses and each course's restrictions on card use.

"Do Not Think, But Try; Be Patient, Be Accurate"

ROBERT U. MASSEY, M.D.

TWO hundred years ago last month Edward Jenner inoculated "a healthy boy, about eight years old," with "matter ... taken from a sore on the hand of a dairy maid who was infected by her master's cows...." Surely this event marked the beginning of the "modern" period in medical science, the "long nineteenth century" that was so fruitful in scientific discovery and technologic invention—among many other things. And James Phipps, the boy, and Sarah Nelmes, the dairy maid, were immortalized as few of us will ever be.

Firsts in history are hard to pin down. A Dorsetshire farmer in 1774, using a needle, inoculated his wife and two sons with the cowpox virus. In 1740 a butcher had himself deliberately infected with a needle dipped in cowpox matter. A country practitioner had purposely infected five of seven children with cowpox by having them "handle the udders of infected cows," and observed that they were resistent to subsequent inoculation with the smallpox. Undoubtedly there were others, but to Jenner goes the honor, and for good reason.

When he was a teen-aged apprentice to a physician, Jenner heard a woman say she could not take the smallpox because she had had the cowpox. History, including even medical history, rarely advances by leaps. Continuity is the rule; discontinuities, as saltations in evolution, are singularities.

In first looking into Jenner's wonderful *Inquiry into the Causes and Effects of the Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, Particularly Gloustershire, and Known by the Name of Cow Pox* one soon senses that he is standing in the sunset rays of the Enlightenment. Like the Declaration of Independence and the American Constitution, here is late 18th-century prose at its most lucid.

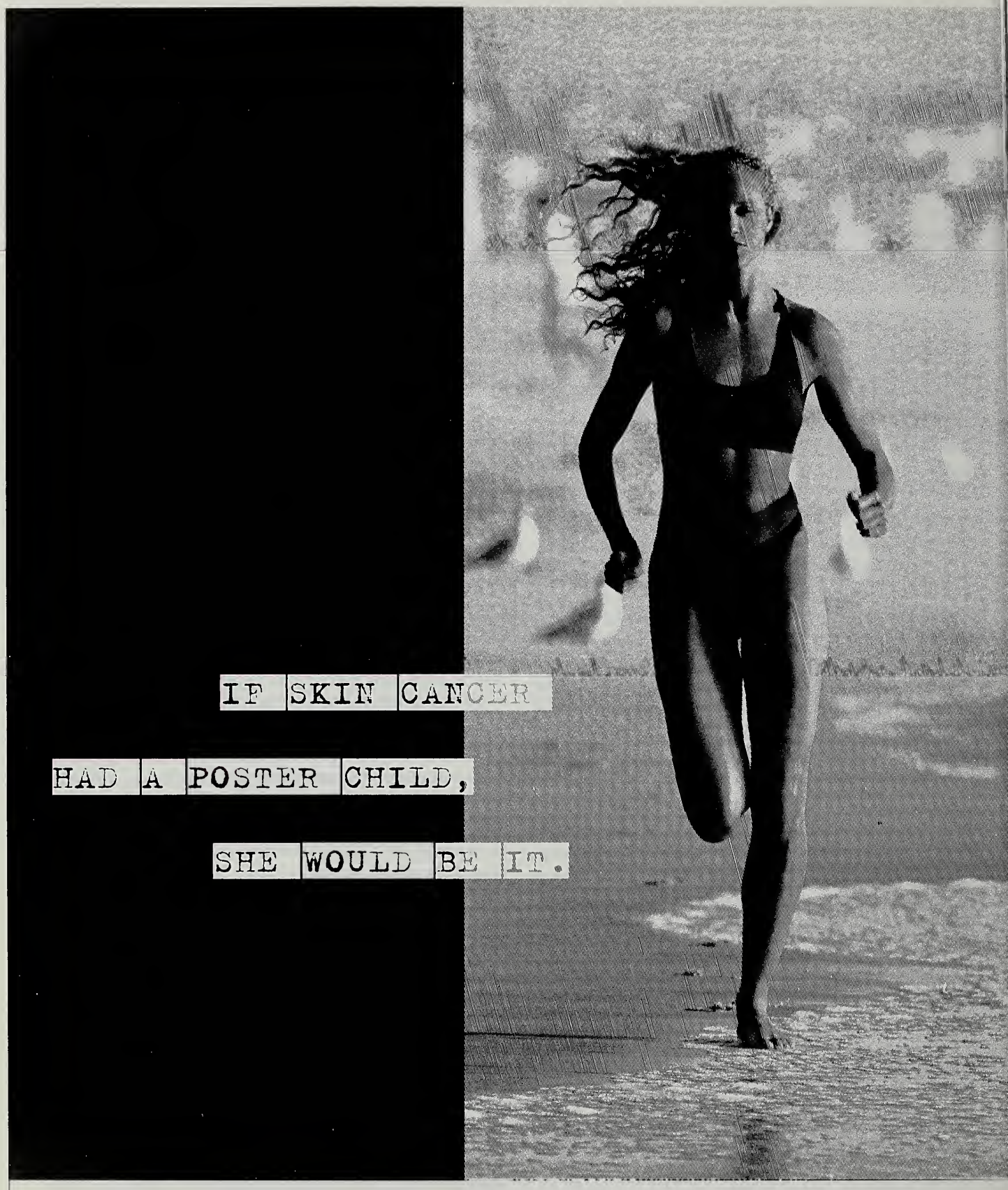
> THE deviation of Man from the state in which he was originally placed by Nature seems to have proved him a prolific source of Diseases. From the love of splendor, from indulgences of luxury, and from his fondness for amusement, he has familiarized himself with a great number of animals, which may not originally have been intended for his associates....
>
> In this Dairy Country a great number of Cows are kept, and the office of milking is performed indiscriminately by Men and Maid Servants. One of the former having been appointed to apply dressings to the heels of a horse affected by *the Grease*, and not paying due attention to cleanliness, incautiously bears his part in milking the Cows, with some particles of the infestious matter adhering to his fingers. When this is the case ... a disease is communicated to the Cows, and from the Cows to the Dairymaids, which spreads through the farm....

Jenner never claimed to be first to inoculate with the cowpox to prevent the smallpox; he *was* the first to reflect deeply on this natural phenomenon that so many had observed, to draw inferences from his observations, to "experiment" and "investigate," his own words, recalling the advice of his mentor John Hunter, "Do not think, but try; be patient, be accurate." He did try, he experimented, and he published his findings in 23 cases to support his assertion "that the Cow-pox protects the human constitution from the infection of the Small-pox."

His work, his vaccination, led to the only eradication of a disease by deliberate intent in history. In the bacteriomania of a 100 years later, many predicted the elimination of all infectious diseases within the life-time of men and women still living. We are less sanguine now; the invisible world of microorganisms has proven itself well equipped to deal with any strategy we can devise. In fact, mortality from infectious diseases is rising. But there has been no smallpox, anywhere, since 1977.

This was a disease that was known in China 3,000 years ago, that was recognized in Europe as early as the 2nd century, Marcus Aurelius may have died from it (180 A.D.), it was widespread during the Crusades, and by the 17th century was pandemic in Europe. It entered America with Cortez's troops in 1520 and proved deadly to the Native Americans. In its ravages age and sex, vice and virtue, wealth or poverty made no difference; its scars, pockmarking half the faces in Europe, were seen everywhere from the slums of London to the palace of the royal family. The case mortality rate in America in the 1940s was still what it had been in Elizabethan England—25 to 35 percent, although the incidence by then, thanks to Jenner and active, progressive departments of health, was no more than 10 to 20 cases per year in most large American cities. Since 1980 it has been declared "extirpated from the earth." By 30 June 1999 all stores of the virus in Russia and the United States will have been destroyed.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.



One in five Americans will develop skin cancer in their lifetime. Don't let your teenager be the one. Teach them to cover up and wear sunscreen when they go outside.

PREVENT SKIN CANCER

AMERICAN ACADEMY OF DERMATOLOGY AAD 1938

Funded under cooperative agreement U50/CCU511453-02, Centers for Disease Control and Prevention (CDC), U.S. Public Health Service

This Month's Reading in Review

TIMOTHY B. NORBECK

Kaiser Permanente members in northern California will soon be able to get their money back if they are not satisfied with the services they receive.... The Oakland based HMO announced on April 30 that patients will receive a customer survey card that asks them to rate their care as "Great!" or "Not So Great," and explain why.... Patients who give their care a low rating will be able to ask for an immediate copayment refund of up to $25 or a call from a department manager or an administrator to discuss the problem.

Kaiser release (30 April 1996)

According to a new Congressional Budget Office report, the Medicare Part A Hospital Trust Fund lost $4.2 billion in the first half of the current fiscal year (NOTE: beginning October 1, 1995 through March 31, 1996).... Medicare Trustees had not expected Part A to go into the red until 1997, but it began paying out more than it took in during 1995 with a loss of $35.7 million.

New York Times (23 April1996)

"There's no reason President Clinton and lawmakers can't come up with a compromise. They're close in the amount of money that they think should be spent on the program, and they agree that structural changes are needed. Each day wasted on deliberation and delays leaves Medicare sicker and elected officials looking more irresponsible."

An editorial in the *Orlando Sentinel*
(26 April 1996)

"Nationwide, the average household will spend $422 on gasoline taxes this year, ranging from a low of $307 a year in Florida to an eye-popping $544 a year in high-tax Connecticut."

Wall Street Journal (3 May 1996)

Dumb and Dumber: Noted champion eater Mort Hurst, who once ate 16 double-decker Moon Pies in 10 minutes and 38 eggs in 29 seconds (resulting in a stroke in 1991), announced his candidacy in January for secretary of state of North Carolina against race-car legend Richard Petty.... Asked if he was intimidated by Petty's name, Hurst said no: "I been on Paul Harvey; I don't think Petty has."

Washington City Paper (12 April 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

The candidates for the Oregon Senate from the 8th District include Thomas Wilde, a Democrat who, if he wins the primary in May, will face his wife, Republican Melinda Wilde, in the general election.... Thomas started out as Melinda's campaign manager but discovered that the two hardly agreed on anything.

Daily News Report (12 April 1996)

A total of 37.7 million Americans are expected to be enrolled in the Medicaid program by the end of the year, up from the total of 22 million recipients who were enrolled in 1975.... Of the 1996 total, 4.4 million are over age 65, 100,000 are blind, 6.2 million are disabled, 18.3 million are dependent children under age 21 and 8.1 million are adults in families with dependent children.

Washington Health Week (29 April 1996)

When the pediatricians and the mothers are on one side and the insurance companies are on the other side, that's a no-brainer.

Al Hunt in the *Wall Street Journal* on the political pressures of maternity-stay legislation
(13 May 1996)

The ancient Chinese art of Tai Chi can help elderly people improve and maintain their balance and independent functioning, according to two new studies.... One study found that Tai Chi—a system of meditation and physical exercise—reduce the risk of dangerous falls among seniors by nearly 50%.... In a separate study, elderly subjects who received Tai Chi training saw their balance improve to the level of a person three to ten years younger.

Journal of the American Geriatric Society
(2 May1996)

Only In America: A court in Rochester, New Hampshire, overturned the rape conviction of a man who had been convicted of three counts against a teenage girl.... There was evidence that the man had assaulted the young woman "hundreds" of times beginning when she was 10, but since he was charged with only three counts, the court thought that prosecutors' mentioning the other episodes might have prejudiced the jury.

Washington City Paper (19 April 1996)

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

"Philosophers Will Be Busy"

To the Editor: I enjoyed Dr. Hollister's comments on "Genes and Behavior" (*Conn Med* 1996; 60:179). He raised nine troubling questions, signing off with the statement "Philosophers will be busy."

First, I should point out that the printer misspelled "Cogito, ergo sum" as "Cognito, ergo sum," mistaking "I think" for "I know." Cogitation is easy, cognition difficult. Unfortunately, every great philosopher, such as the two he cited, Plato and Descartes, distinguished themselves by contrast to the opinions of their predecessors. By definition, great philosophers disagree. Plato and Descartes, for example, would have disagreed on fundamentals.

The discovery of the "I," the individual personality, as in "I think, therefore I am," is the distinguishing feature of modern Cartesian philosophy, as contrasted with classical Platonic philosophy. Plato thought that knowledge, including knowledge of the good and justice (the right), is the innate memory or preexistence of the soul. Plato never doubted the immortality of the soul, hence St. Augustine called him "the Christ of the Greeks." Descartes, although educated by Jesuits, doubted all, but he could not doubt the fact that he doubted. Since doubting is thought, he had to believe in his *cogito*, from which he deduced his own existence, the existence of the world and its Creator, etc.

Science, since Galileo, has challenged these philosophic systems based on beliefs without evidence and doubts without proof. How can one be sure that one can doubt all? Unfortunately, all the great philosophers are dead, so we can no longer question them. Plato and Descartes would have disagreed on the issue Dr. Hollister raised, "free will." Plato was free to believe, and Descartes free to doubt. In this sense they were both free, but by their separate methods drew contrasting conclusions, those of classical and modern philosophy.

Thus we are free to entertain opposing ideas, even the idea that free will is a myth and the idea that myths are important, and that the history we create every day is mythical, and that individual responsibility can assume, on rare occasions, mythic (heroic) proportions. Plato, Descartes, and even Darwin, were entirely ignorant of the genes, but they knew something about human behavior. Science would say that Dr. Hollister's nine troubling questions have not been put in the proper form. Your brain, not your genes, poses your questions, decides your ideas, and puts them in language. One might consider the role of the brain, not merely with respect to its genetic endowment, but also to its epigenetic nutrition and neoteny, learning and memory, experience, imagination, and creativity.

Scientists will be busy!

Charles W. Needham, M.D.

Norwalk

Dear Dr. Needham: Than you so much for your letter! Dr. Hollister wrote "cognito, ergo sum," so it was not the printer's error! And the editor's face is red; he knew better but just didn't notice! And neither did Dr. Hollister.

Does your brain pose *your* questions or *its* questions? Sir John Eccles asserts that the self, which he said is immaterial, uses its brain but is not one with its brain.

I hope, but probably in vain, that your letter will start an active exchange of letters.

Robert U. Massey, M.D.
Editor

To the Editor: Thank you for your thoughtful response to my remarks on Dr. Hollister's "Genes and Behavior."

Your query "Does your brain pose *your* questions or *its* questions?" raises the problem of the agent and the agency. Shakespeare was both playwright and player.

Eccles's assertion that the immaterial self uses its material brain is surely consistent with Cartesian dualism and age-old religions. It remains to be decided if it is also consistent with modern physics and neurochemistry. Certainly the idea of "Substance" was abolished by Max Planck in 1900, when he defined the quantum as "an atom of energy."

I tend to agree with Wittgenstein (*Tractatus*), the last of the great dead philosophers, that all philosophical problems are misunderstandings of the logic of language. I wrote a book on the subject of mind and brain, called *Cerebral Logic,* and another on the evolution of language, *The Principles of Cerebral Dominance,* prior to my arrival in Connecticut.

I believe the questions raised by Dr. Hollister are significant because they are troubling and not readily answered in the form in which they were stated. The new science of genetic engineering raises other questions we do not have the language to decide, much less the institutions.

There are so many troubling issues nowadays, not the least in managed care for moving the physician from his traditional role as guardian of the body to overseer of

health costs. I believe the philosopher Karl Marx first introduced the foul notion of looking at human existence in primarily economic terms.

Do you recall the question on your application to medical school: "Why do you want to be a physician?" Imagine the response in our brave new world: "Why do you want to be a gatekeeper?" I've thought of writing an article on the topic entitled "Just Say NO!" There is no earthly power greater than the veto.

With you, I hope my letter will begin an active exchange. My friend Dr. Ernest Atlas, here in Norwalk, also has a long-term interest in philosophy, going back to college days. He told me he was interviewed about his real concerns about managed care by the local press. I missed the article. It takes courage to speak negatively about managed care when the war has already been won by the HMOs. Who now speaks on behalf of the best interest of the patient?

We no longer have mythic heroes in our society. Where are the statesmen? Where is the noble physician we once knew? So much has been replaced by cynicism, celebrity, and media-hype.

I suspect there are other physician-readers of *Connecticut Medicine* who have a lively interest in philosophic, scientific, and literary issues of the day, issues that demand attention in a society that is losing its human voice. Perhaps *Connecticut Medicine* will be the vehicle that brings us together.

Personally, I think cynicism is a dead philosophy.

Charles W. Needham, M.D.

Norwalk

In Response to "Deconstructing the Hippocratic Oath"

To the Editor: In the April 1996 issue of *Connecticut Medicine* Dr. Massey writes about his reflections on our changing ethics in medicine, "Deconstructing the Hippocratic Oath." Strangely enough, as I graduate this month from Yale Medical School and prepare to recite the most recent revision of the Yale Physician's Oath I am reminded of another lost paragraph of our Hippocratic traditions.

> "... to reckon him who taught me this Art equally dear to me as my parents—to share my substance and relieve his necessities if required—to look upon his offspring in the same footing as my own brothers and to teach them this Art if they shall wish to learn it without fee or stipulation."[1]

I am sure my classmates will agree that though we may witness, receive, or provide professional courtesy (the topic of my medical shcool thesis) few of us can say that we have received our medical education "without fee or stipulation." It seems that all of our Hippocratic virtues are subject to modification and reinterpretation within the current medical environment. I do not believe, as Dr. Massey suggests, that these virtues must necessarily be "swept unto the rubbish heap of history" but modified to reflect changes in the ever growing medical-industrial complex.

Jeffrey I. Algazy

Yale Medical Student, Class of '96

REFERENCE

1. Edelstein L: In: Burns CR, ed. *Legacies in Ethics and Medicine.* New York, NY: Science History Publications; 1977.

Connecticut Supreme Court Limits Liability of Mental Health Care Givers

To the Editor: In a recent *Connecticut Medicine* (60:221-2) article, authors addressed health care providers' duty to warn third parties potentially endangered by the providers' patients. The article referred to the pending *Fraser* litigation in which the United States Court of Appeals requested an advisory opinion from the Connecticut Supreme Court.

The killer and Hector Fraser knew each other for a long time. Before and after his military service, he worked in Fraser's floor covering store and was a frequent visitor to his home. Without provocation, he stabbed Fraser to death.

A psychiatric outpatient at the West Haven Veterans Administration Medical Center (WHVAMC) at the time of the attack, the killer had been discharged from the military after being diagnosed as psychotic and had been under psychiatric care for over 10 years at the time of the murder. There was no evidence that he had ever made any threats against anyone although his therapist knew that he carried weapons from time to time.

Because of the lack of an identified target, the claim that the WHVAMC had a duty to *warn* Fraser of a potential violent act by its patient was removed from the case early on. The remaining issue was whether the mental health providers had a duty to *control* the patient to prevent harm to unidentified third person.

On the facts of the case, the Superme Court advised the Court of Appeals that the WHVAMC did not have any duty to exercise control under Connecticut law, so as to prevent the patient from attacking Fraser because:

1. Fraser was not an *identifiable* victim;

2. Mental health care providers should not be required through tort liability to exercise control in possible violation of a patient's due process rights; and

3. Other courts have refused to expand the concept of duty to control to unidentifiable persons.

Chief Justice Ellen Peters' discussion in *Fraser* stands for the rule that a Connecticut personal injury plaintiff who seeks to impose a duty on a psychotherapist to exercise control over an outpatient must show explicitly that the victim was individually identifiable or, at least, within a "zone of risk." Reflecting on its unwillingness to impose liability in favor of an intended beneficiary of a will on the attorney for the testator for negligently delaying the drafting of estate planning documents, the Supreme Court opined that it was "equally appropriate to balance the interests of those injured by psychiatric patients against the interests of the mental health profession in honoring the confidentiality of the patient-therapist relationship...."

Although not abiding the plaintiff's claim in *Fraser,* the Supreme Court made it clear that *Tarasoff*-type victims will have little difficulty in pleading a proper cause of action in future Connecticut litigation.

Mary Alice Leonhardt, Esq.
Elliott B. Pollack, Esq.
Pullman & Comley, LLC, Hartford

Legal Defense Fund for Physicians Established

FARFEP (First Amendment Rights Fund for Every Physician) was established in 1994 after an emergency physician was sued for libel and slander by a large corporation for writing an editorial about the entrance of big business into emergency medicine. The fund was established to help any physician who is sued for writing or speaking on any medical issue. FARFEP is a 501(c)3, tax-deductible First Amendment fund created to allow an individual physician to speak the truth about the "business" of medicine without fear of being crushed by the expenses of a meritless lawsuit, as well as to educate the public. Our first beneficiary had a vigorous battle, but he prevailed with the assistance of FARFEP. The fund is ready and willing to assist in the defense of any physician to protect his or her First Amendment Rights. Contributions and inquiries can be sent to: FARFEP, PO Box 1968, Santa Fe, NM 87504.

Gifts Program Lowers Fees

Nonprofit health care organizations can now participate in a nonprofit corporate gifts program at considerbly lower membership fees. NAEIR, the National Association for the Exchange of Industrial Resources, now offers membership starting at $255, up to $595, plus shipping and handling. The merchandise itself is FREE, however. Participating nonprofits average $2,000 worth of new goods from each 300-page catalog. Donated products include office supplies, computer software and accessories, housekeeping supplies, toys and games, tools and hardware, arts and crafts, clothing, paper goods, personal care products, and seasonal decorations. All new members are covered by a moneyback guarantee.

For free information on this gifts program, call **1-800-562-0955** or e-mail: **member.naeir@misslink.net**

From the Executive Director's Office

SUMMARY OF PROCEEDINGS
CSMS HOUSE OF DELEGATES—ANNUAL MEETING
RAMADA INN, MERIDEN—8 MAY 1996

Reports and Addresses

The House received reports, addresses and/or remarks from the incoming President and the retiring President, Secretary, Treasurer, the Chairman of the Council, Delegates to the AMA, Chairman of the Board of Directors of COMPAC, the CSMS Executive Director, CSMS/IPA, Connecticut Medical Insurance Company (CMIC), Standing Committees, Representatives and Advisors, and Delegate from the Massachusetts and New Jersey Medical Societies. All of the reports and resolutions were published in the Handbook that was distributed to the delegates, with a few exceptions. The address of the Executive Director, Tim Norbeck, and the retiring President, Dickerman Hollister, Jr., M.D. appear at the conclusion of this summary. The inaugural address of the new President, Michael M. Deren, M.D., appears as the President's Page in this issue.

PRINCIPAL ACTIONS TAKEN

Election of Officers and Others

The House voted to approve the published report of the Nominating Committee (the Council). Officers elected were:

President: Michael M. Deren, M.D., *New London*

President-Elect: Stanley J. Keating, M.D., *Hartford*

Vice-President: Craig W. Czarsty, M.D., *Oakville*

Secretary: John P. Bigos, M.D., *New London*

Treasurer: Robert R. McDonnell, M.D., *New Haven*

Speaker of the House of Delegates:
Howard J. Wetstone, M.D., *Hartford*

Vice-Speaker of the House of Delegates:
Sultan Ahamed, M.D., *Norwich*

Councilor-at-Large:
Dickerman Hollister, Jr., M.D., *Greenwich*

Delegates and Alternates to the American Medical Association:

Edward A. Kamens, M.D. Fairfield (D)
1/1/96-12/31/97
Joseph C. Czarsty, M.D., Waterbury (A)
1/1/96-12/31/97

Jerome Bobruff, M.D., New London (D)
1/1/96-12/31/97
Roger S. Beck, M.D. Wethersfield (A)
1/1/96-12/31/97

Jerome K. Freedman, M.D., Branford (D)
1/1/97-12/31/98
Neil H. Brooks, M.D., Rockville (A)
1/1/97-12/31/98

Joseph S. Sadowski, M.D., Hartford (D)
1/1/97-12/31/98
Anthony P. Redmond, M.D., Greenwich (A)
1/1/97-12/31/98

Mehdi S. Eslami, M.D., Waterbury (D)
1/1/97-12/31/98
John B. Franklin, M.D., Hartford (A)
1/1/97-12/31/98

In approving the report of the Nominating Committee, it was also voted to disband the Committee on Emergency Medical Services and create a new standing Committee on Workers' Compensation.

Following are the actions taken on the business that came before the House:

PROPOSED BYLAW AMENDMENT

There was one item of old business, an amendment to the Bylaws regarding procedure in amending the Bylaws which was referred to the Council for consideration. The Council amended the proposed Bylaw change with the addition of the words that appear in italics and capitals:

Article XVI—Amendment to Bylaws

"The Bylaws of the Society may be amended *WHEN A QUORUM IS PRESENT* by an affirmative vote of at least two-thirds of the delegates present and voting at any regular or special meeting of the House of Delegates. Amendments shall take effect immediately upon adoption unless otherwise specified."

RESOLUTION: FAIRNESS FOR PATIENTS

This resolution was introduced by the Fairfield County Medical Association and concerned supporting the concept of Any Qualified Provider (AQP). The House voted to adopt a substitute resolution as follows:

"Resolved, that the CSMS House of Delegates reaffirms its support of AQP legislation."

RESOLUTION: CONFLICTS OF INTEREST FOR LEADERSHIP OF CSMS

This resolutions was also introduced by Fairfield County Medical Association and related to the issue that managed care business relationships can potentially create conflicts of interest for leadership of the Connecticut State Medical Society. The House voted to adopt an amended resolution as follows:

" Resolved, that all present officers and councilors and nominated officers and committee chairpersons of the Connecticut State Medical Society shall disclose for publication in the Delegates' Handbook any and all business relationships with insurance and managed care entities other than the usual "third party" practice relationships, and be it further

Resolved, that the CSMS Committee on Ethical and Judicial Affairs develop a policy on conflicts of interest for consideration by the next House of Delegates meeting."

RESOLUTION ON MANAGED CARE

The following resolution which was introduced by the Executive Board of the Orthopedic Section was referred to the Committee on Legislation for report to the Council:

"Resolved, the Connecticut State Medical Society will initiate and pursue legislation that will hold all such managed care individuals and their parent insurers liable for damages suffered by individual patients whose care has been altered as a result of the actions of individuals acting as managed care reviewers."

PRESENTATIONS AND AWARDS

American Medical Education and Research Foundation (AMA-ERF)

Dr. Hollister and Mrs. Czarsty presented the following awards:

University of Connecticut School of Medicine ... $7,678.53—Bruce Koeppen, M.D., Dean, Academic Affairs and Education, accepted the check.

Yale University School of Medicine ... $9,337.50—Michael Kashgarian, M.D., Professor of Pathology, accepted the check.

Connecticut Science Fair Awards

Dr. Hollister announced the following awards:

First Place—*Senior Division*—Mary Mulcare, Greenwich High School

Project: "A Study of Cryptosporidium in Drinking Water"

Second Place—*Senior Division*—Viviany Taqueti, Danbury High School

Project: "The Overlooked Perils of Resistant Bacteria"

First Place—*Junior Division*—Erin Onsager, Eighth Grade Student, Fields Memorial School, Bozrah

Project: The Biological Water Quality of Selected Sites on the Yantic River"

Second Place—*Junior Division*—Nathan Proctor, Seventh Grade Student, Adams Middle School, Guilford

Project: "Which Fonts are Easier to Read?"

The first place winners received a plaque and a check. The second place winners received a plaque and a book.

Award to Retiring President

Dr. Joseph Czarsty, Chairman of the Council, presented a Paul Revere silver bowl and past president's pin to Dickerman Hollister, Jr., M.D.

Dr. Hollister gave the Oath of Office to the new president, Dr. Michael M. Deren, New London, and presented him with a gavel and a presidential medallion inscribed with his name and date.

Address of the Executive Director

CSMS Annual Meeting—House of Delegates

8 May 1996

TIMOTHY B. NORBECK

AT this meeting of the House of Delegates in 1919, some 77 years ago, the dinner menu as printed on the program included a martini, a variety of foods, and cigars and cigarettes. The speaker addressed the House on the *Biologic Aspects of a League of Nations*. My, how times have changed! If there is one thing that we have learned, it is knowing that we must expect the unexpected.

Like the young priest who was sent over to a nursing home to check on one of his oldest parishioners — a lovely but elderly woman; he was quite nervous and kept eating peanuts from a bowl beside her bed. When he got up to leave, he finally became aware that he had eaten all of them.

"I'm so sorry I ate all your peanuts," he stammered. "Oh, that's all right," she graciously said, "I'd already gummed all the chocolate off them anyway."

Our major battles with the insurers and optometrists only serve to illustrate further how important the issue of physician unity is to the preservation of medical practice. This fight against optometry was everybody's fight — for patients and physicians not only in our state but in all of the others as well. They knew that if they could break us in Connecticut, the floodgates would open and their task would be much easier to expand their sphere of influence. That is why they have spent hundreds of thousands of dollars in this campaign—gained from out-of-state dollars—and that is why it was necessary to resist with all our might. To do any less would be an open invitation to other limited-licensed practitioners to test all the waters.

Physician political action in the past has always fallen short of the efforts of our adversaries. Up to now, for physicians it has always been deemed useful but not absolutely necessary. For our opponents, who seek to displace you from your customary role as the principal caregivers, but without the benefit of medical school, political action has been an issue of survival. And under those circumstances, an appeal to survival will win every time. This massive threatened incursion from optometrists and many managed-care entities should convince physicians beyond a shadow of doubt that the matter of survival is no longer someone else's problem—we must think in those terms, too. And physician survival depends on physician unity and staying together—that your fight is my fight. We simply can no longer stand the bickering, infighting, second-guessing, and divisive suspicions which have divided physicians. There are real enemies out there, and we need to muster every ounce of strength and other resources to fight them. We need to close ranks—now!

In 1943, after the Danish underground had intensified its sabotage against Hitler, the Nazis decreed one day that all Jews in Denmark must wear a yellow arm band with a Star of David. Similar decrees had marked Jews for deportation to concentration camps, country after country, all across Europe. That night, the Danish underground relayed a message throughout Denmark. King Christian X had announced that each Dane was the same as every other Dane, that he himself would wear the first Star of David, and that he expected all Danes to follow his example. The next day in Copenhagen almost everyone wore the Star of David. Having no other choice, the Nazis rescinded their order and the Danish Jews survived.

Physicians must put aside their differences—and realize that sticking together and engaging in real political action can prevent a survival issue from appearing around the next corner.

John Winthrop was the first governor of the Massachusetts Colony. While crossing the ocean to America, he said to his fellow Puritans on the ship Arbella: "Now the only

way to avoid this shipwreck and to provide for our posterity—we must be knit together as one person—we must entertain for each other brotherly affection —we must delight in each other, make others' conditions our own, rejoice together, mourn together, labor and suffer together." I would submit to you that physicians should and must heed that advice.

Look at how the lawyers come together. Every time they are threatened, as happened most recently with the three California propositions to institute no-fault insurance, restrict shareholder lawsuits, and limit attorney fees, they rally as one and defeat their opposition. And it helped that trial lawyers between 1991 and 1994 contributed more to candidates than the four largest labor unions combined. Some refer to the lawyers as a third political party. And guess what? Needed national tort reform is probably down the chute this year because of their efforts. The trial lawyers losing a legislative battle is a little like a Pia Zadora movie—everyone's heard of it but nobody's ever seen one. And their numbers, already formidable, are expanding rapidly. It reminds me of a recent comment made by a prominent law school dean: "If we continue to grow lawyers at our current rate, by the year 2005 we'll have more lawyers than people."

If you want to know what's going on in health-care delivery today, just look at the financial pages—chances are the latest merger or acquisition affecting millions of lives will be there. We are also aware of the concomitant corporate downsizing with every deal. Business is great, profits are high, thank you very much—you're fired. The victims of this economic mugging don't seem to matter anymore—just bottom-line profits. People are concerned.

The big companies say they are only staying competitive in a chaotic world of global competition and fast-changing technology. But are they? The very qualities that many executives say their firms need in order to compete—flexibility, teamwork, and creativity—are in fact being destroyed by the very organizational culture they are encouraging.

A recent nationwide survey of workers found 49% worried about losing their jobs, up from 20% in 1990. All this worry translates into a "me-first" attitude which negatively impacts on employee cooperation.

The average salary and bonus for a chief executive rose by 18% last year, to $1,653,670—slightly above the 15% gain in profits. But toss in gains from long-term compensation such as stock options, and the CEO's average total pay climbed 30%, to $3,746,392—or Marie Antoinette proportions, as some have said. People are annoyed.

We heard recently about AT&T's CEO Robert Allen, who received a $1.5 million bonus and a tenfold increase in stock options last year, although the telecommunications giant barely broke even due to a computer deal gone sour. Soon after, Mr. Allen downsized 40,000 jobs and AT&T stock shot up 2-1/2 points.

By contrast, the *Wall Street Journal* mentioned a Peggy McMullen who has moved and taken two pay cuts since 1990 to remain employed by AT&T. A $15-an-hour equipment operator, she can't afford to replace her 1979 Chevrolet. Last year, her "bonus" consisted of a T-shirt, tote bag, and a few free meals at her plant. When Henry Ford automated his Model T assembly line back in 1913, he decided to pay workers twice the going rate—a princely sum back then of $5 a day. It wasn't all altruistic. He did it so that workers could better afford to buy the cars they were assembling. It's too bad that many of today's large companies can't see that logic even if they have no heart.

So what does all this have to do with health care you might ask? Actually, more than people think. People are getting tired of their treatment by big-business in general and by the arrogance of some of the huge health plans in particular. The winds of public opinion are blowing against them which can only help our effort to achieve reform in the managed-care arena. And if downsizing work forces isn't cruel enough in the face of record profits, those monoliths are contributing to the already alarming numbers of the uninsured in this country. In the present soulless corporate milieu, human life has become transformed into a commodity. The public, media, and legislators—although slow initially to react—are sounding off now.

The media is beginning to understand their important role in advising their readers, listeners, and viewers of what is at stake in health care if physicians are no longer in charge of the treatments. This hasn't always been the case, of course, because it has taken some media types an inordinately long time to understand the stakes.

I'm reminded of a story about the photographer who applied for a job at a newspaper. One of the first questions on the application was: "You have the choice of saving a drowning man or getting a prize-winning photograph. What type of film would you use?" But seriously, the media now finds this newsworthy.

Newsweek has referred to this disturbing phenomenon as "in your face capitalism." You lose your job, your ex-employer's stock price rises, and the CEO gets a stratospheric pay raise or bonus. Something is very wrong when stock prices keep rising on Wall Street while Main Street is littered with the bodies of workers discarded by big companies. People are angry. In one sense, isn't this just what is happening with some of the huge managed-care companies and their efforts to downsize patient benefits and physician reimbursements?

In the latest of the mega-mergers, the founder and chairman of U.S. Health Care, Leonard Abramson, will get almost $1 billion in stock and cash from the deal. At the same time when patients are inconveniently shuttled off to another state for something that could have been performed near home, at the same time when hospitalizations are limited, at the same time when new mothers are forced out of the hospital 24 hours after giving birth, at the same time when some necessary but expensive treatments, medications, or tests are denied, that kind of financial windfall appears to be just plain obscene. It reminds me of what industrialist Clint Murchison said: "Money is like manure. If it's spread around it does a lot of good. But if it accumulates in one place, it stinks like hell!"

Patients and legislators are becoming more and more aware of the problem. Over 400 bills to regulate managed-care companies have been proposed this year in state legislatures, compared to about half of that number last year. Perhaps it may be our turn soon. Perhaps it may be our turn now. You know that the House passed substantial managed-care reform—a wonderful victory in this, above all states. It was a patient's Magna Carta, so to speak. The Senate modified it 36 hours ago. We won't know what we have until tonight. But whatever we get, considerable progress has been made, and we will build on it. Because of their strength and our physician division, conventional wisdom might have us losing this accountability battle to our insurer adversaries, but I think that is drawing the wrong conclusion.

Much like the story Abe Lincoln told a jury when he became convinced that he was losing a case even though right was on his side:

"A farmer back home was sitting on his front porch," Lincoln began, "when suddenly his six-year-old son came running from the barn. "Father, Father," the boy cried, "the hired hand is in the hayloft with Big Sister. He was pulling down his pants and Big Sister was lifting up her skirt. I'm afraid they are going to pee in our hay."

"Now, now, Son," said the farmer calmly, "you have all the facts right but you have jumped to the wrong conclusion." The jury roared with laughter, right prevailed, and Lincoln won his case handily.

Of course, the need for antitrust reform is another reason medicine must be united and strong. The unfairness toward physicians is appalling. Blue Cross/Blue Shield of Texas and Illinois recently merged into a single mammoth insurer with nearly four million subscribers, revenues of $6 billion, and more than 10,000 employees. The government didn't bat an eye.

But if a few physicians want to form their own health-care network, that same FTC and Department of Justice will demand that the plan be capitated and cannot include more than 30% of the community's doctors. And this is America? There are positive signs of late that the government will relent on those obvious biases, and we will follow this issue carefully. In the meantime, we must continue our efforts for relief and that much sought after promised land of a level playing field.

With the optometry issue so fresh in our minds, it seems appropriate to mention the prominent ophthalmologist who once successfully treated surrealist painter Salvador Dali. In lieu of a fee, the physician requested that Dali paint something for him, on a subject of Dali's own choosing.

The grateful Dali therefore painted an enormous eye in meticulous detail and, in its very pupil, he placed a small but perfect portrait of the doctor.

The ophthalmologist looked at the painting with awe and astonishment and said: "Well, Mr. Dali, I can only say that I am very glad that I'm not a proctologist."

For you historians out there, it is interesting to note that it was 112 years ago today when former President Harry Truman was born. Talk about taking responsibility—especially today in a world that seems to skirt it. As you know, Harry Truman entered politics after his men's clothing store failed. He could have walked away from his bankrupt business but instead took responsibility for paying back every penny he owed. His partner actually did declare bankruptcy, but he refused to do so. The business was $35,000 in the red—a great deal of money back then. Some 15 years after the store went under, he was still paying off the debt and would be strapped for money for 20 years. But he paid off every single creditor.

As U.S. senator he made it his responsibility to learn about the complex legislation pending before his committee. To do that, he arrived at his office early every morning—so early, in fact, that he became the first U.S. senator ever issued his own key to the Senate Office Building.

Timing is everything. And if we can be united, our time is coming. Remember back in 1992 at the Houston Republican National Convention. Popular former President Ronald Reagan was hoping to help keep George Bush in the Oval Office by giving a rousing speech on national television. But the convention activities dragged on and on as they often do, and it was getting late. Remember the first thing Ronald Reagan did when he got to the podium. He looked at his watch. It was 11:05 and the local news programs were breaking into the convention coverage. And Reagan knew very well that 50% of the electorate were in the Eastern Time Zone. The moment was lost.

I mentioned Studs Terkel's book, *Working*, at our November meeting and how so many people in so many different words talked about how they were looking for a calling, not a job.

"I had worked in a bank," said a fireman. "You know it's just paper. You're looking at numbers; it's not real. But I can look back and say: I helped put out a fire. I helped save somebody. It shows that I did something on this earth."

A construction worker said there should be a strip on every building with the name of every bricklayer and every electrician so they could take their children and say—"See up there on the 40th floor, that's me. I put the steel beam in. Picasso can point to a painting. What can I point to? Everybody should have something to point to."

A hooker complained that her life was not much different from somebody who works on the assembly line 40 hours a week and comes home cut off, numb, dehumanized.

The advertiser who said that he didn't think what he did was necessary or that it performed a service.

The press agent who said that "we do whatever we can. You try to make it a little better for your own self-respect."

If ever there was a book that illustrated how desperately people were looking for something in their work to feel good about—to truly help people—it is the book, *Working*.

Despite its changing nature, the enormous challenges before us, the attempts of many to depersonalize the practice of medicine, and days which sometimes look hopeless, you must not lose heart. There is a movement growing daily—an awareness if you will—of these injustices—and the tide is turning. Our work is just beginning. And every day of your professional lives you can feel it and you can say it—the words that everyone else wants so much to say—"I helped someone today."

Lord help us if this is the best of times, and I don't know if we have now seen the worst of times.

But one thing is very clear—this is the *only* time we have, and we must either move ahead and plow new ground or sit back and watch the weeds grow.

Address of the Retiring President

CSMS Annual Meeting—House of Delegates

8 May 1996

DICKERMAN HOLLISTER, JR., M.D.

IN my final address as president, I will review the most significant actions taken by CSMS over the last year. As in my inaugural speech one year ago, I will emphasis three broad areas of achievement.

The first is our legislative agenda. We have repeatedly testified at the State Capitol for the Patient Protection Act (PPA), appearing before both the committees on Public Health and Insurance. This testimony has been published in the May issue of *Connecticut Medicine* (*Conn Med* 1996; 60:243-9).

The House is generally supportive of our views. The Republicans and the governor, however, still heed the economic threats of the business community, who contend that the regulation of managed care will cost the state jobs. I personally delivered our message of concern to the lieutenant governor and stressed our disappointment in the governor's position, one contrary to views he expressed before our council during his candidacy.

As you have heard from David Parke, our efforts have been productive. By the end of this legislative session, I believe we will have at least a basic version of the Patient Protection Act. By guaranteeing our patients' full disclosure about coverage, subscriber satisfaction, mechanisms of appeal, point of service options, and data reporting to the Department of Public Health, we will protect our patients and our profession from some of the egregious behavior of managed care. Most significantly, this bill bans the "gag rule," so that we can discuss all treatment options with our patients, and it prohibits insurers from penalizing any physician for giving such information.

To get even the most minimal PPA required our delaying the push for Any Qualified Provider (AQP) until a future session. I know some of you are disappointed in this strategic change. This House had made AQP a priority. But you also passed a resolution for us to seek PPA legislation. Our polling of lawmakers showed that PPA did have bipartisan support; AQP did not, having lost even the limited backing it had last year. Given the realities of the current legislative session, PPA had a chance to succeed, while AQP meant certain defeat. We choose to get at least some managed-care regulation now, I think the results will demonstrate the wisdom of this approach.

In other legislation, we scored a victory on the optometry bill. Working in cooperation with the eye physicians, we prevented the optometric use of lasers and injectable medication and severely restricted the optometric treatment of glaucoma.

In addition, we won legislation requiring licensure for tele-medicine practitioners. CSMS was able to amend this bill to include pathologists. We also expect victories for our bills on mandatory maternity coverage and access to emergency room services. Testimony on these issues is also printed in April's *Connecticut Medicine*.

Given the short session and the still dominant insurance and business lobbies, I think CSMS can be gratified by its victories. We will work for additional reform, including CSMS. I wish to thank all of you who testified, wrote letters, and called your legislatures on our behalf. Your support was critical to our efforts.

The second area of achievement for the past year is public health. Our committee, under the direction of Benjamin Gordon and with the leadership of our soon-to-be president, Michael Deren, has developed a state-wide campaign against violence in the media. We must continue to emphasize this critical issue that both harms our patients and strains our hospitals and emergency rooms. In addition, our Public Affairs Committee, chaired by Herbert Weisberg, has developed a patient information brochure

to enable our patients to make an informed choice among health insurances. This has been distributed to all our members for their waiting rooms and to the public at libraries and senior centers. Finally, we have developed a physician speakers' directory so that the media and community service organizations can hear directly from our members about issues of medical care and health-care reform.

The third area of achievement is member services. Our state-wide physician health program is a success, protecting our patients and rehabilitating our physicians. Approximately 30 doctors are now in treatment. While monitored by the program, they continue to practice, and their anonymity is secure. In addition, the program now has the resources for physician education, case finding, and financial assistance for doctors in treatment.

My meetings with Commissioner Harriman have led to a reduction in the "open file" backlog. Many of you have volunteered your services to reduce delays in credentialing, and the department itself has changed procedures to expedite these cases. The backlog is already down 15% from a year ago, and further reductions will follow in the months ahead. More importantly, in cooperation with the Department of Public Health, we passed legislation enhancing confidentiality of information obtained from the *National Practitioner Databank.* Instead of creating an "open file," this material is *now* classified as under "confidential review." This change should prevent the delays in credentialing some of you have experienced.

On a less positive note, PROCIS, our credentialing service, has had difficulties with capitalization. While potentially an important and valuable service, its future is uncertain. I personally believe, however, that the control of information is vitally important to our profession. We must have our own data about physicians and their practices, and we must take the lead in outcome measurement. The public will soon be clamoring for such information, as has already happened in Massachusetts and New York. We must have the data to counteract the outrageous assertions of our critics, whether the managed-care industry, the media, or the Ralph Nader-type public interest groups.

Finally, we have computerized the offices of CSMS. This has enabled us to improve all aspects of administration and improve communication with our membership about legislative and other issues. It could also be the nucleus for our own physician databank. Even now we have a database available to you all through Physicians-On-Line, one of just a handful of medical societies so enrolled. This is just the start of what I hope will be a valuable resource for us all.

I will close now with a few thank yous. I particularly want to thank Tim Norbeck, Mag Morelli, and all the staff for their tireless efforts this year. They truly do an outstanding job in protecting our profession from critics and representing us to the public. I want to thank the members of the council for their leadership and support of my presidency though issues not always clear-cut and sometimes contentious. I want to thank you, the House, for your counsel and willingness to contribute your most valuable resource, your time, to better health care for our state. Finally, I wish to thank my wife, Frankie, and our children for bearing up with my many missed dinners.

CSMS is in excellent hands with your new president, I know that the council and this House will give him the same support I received, and that our future as both a society and a profession is bright.

Thank you for letting me serve as your president.

IN MEMORIAM

AHMED, EZZ-EL-DIN, Faculty of Medicine Alexandria University, Egypt, 1952. Dr. Ahmed, an internist specializing in cardiovascular diseases, maintained a private practice in Norwalk until his retirement in 1993. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Ahmed died in 1995 at the age of 67.

BATELLI, CLEMENT F., Yale University School of Medicine, 1928. Dr. Batelli served the New Haven Department of Health for 37 years, beginning as a school physician, becoming director of the Bureau of Communicable Diseases and Tuberculosis, and health officer, retiring in 1966. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Batelli died 27 January 1996 at the age of 94.

BEAKEY, JOHN F., Tufts University School of Medicine, 1943. Dr. Beakey started an allergy practice in Hartford in 1949 and was an attending physician at the Allergy Clinic at St. Francis Hospital and Medical Center for over 35 years. Past president of the Connecticut and New England societies of allergy, Dr. Beakey was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Beakey died 15 April 1996 at the age of 78.

CAMPBELL, IAIN G., Kings College in the University of Durham, England, 1958. From 1965 to 1995, Dr. Campbell served as Attending Anesthesiologist at Manchester Memorial Hospital, including two periods as chief of the Anesthesiology Division. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Campbell died 18 April 1996 at the age of 61.

HART, ROBERT W., Cornell University Medical College, 1945. Dr. Hart practiced internal medicine in Hamden for 29 years and was associated with Yale-New Haven Hospital. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, where he was active on many Medicare advisory committees from 1962 to 1969, and the American Medical Association. Dr. Hart died 20 March 1996 at the age of 74.

HUSS, GERALDINE R., Temple University School of Medicine, 1949. Dr. Huss, a pathologist, was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Huss died 8 November 1995 at the age of 72.

LaFEMINA, NICHOLAS F., State University of New York College of Medicine, 1925. Dr. LaFemina was a family practitioner in New Haven for many years and was chief of obstetrics and family medicine at the Hospital of St. Raphael. He was a member of the New Haven County Medical Association where he served as president from 1966 to 1967 and as an alternate delegate to the Connecticut State Medical Society from 1962 to 1963, the Connecticut State Medical Society, and the American Medical Association. Dr. LaFemina died 27 January 1996 at the age of 92.

LAUBSTEIN, MELVIN B., State University of New York College of Medicine, 1956. Dr. Laubstein, an obstetrician and gynecologist, served on the staff of Griffin Hospital from 1963 until his retirement in 1994. He was a past president of the Griffin Hospital medical staff and had served as president and medical director of the Valley IPA for Suburban Health Plan. Dr. Laubstein was a former instructor on the Yale-New Haven Hospital staff and had served as a volunteer physician in Kenya. Active in the Naugatuck Valley Medical Association, Dr. Laubstein was a member of the New Haven County Medical Association for which he served as chairman of the Board of Censors and Peer Review and as a delegate to the Connecticut State Medical Society for 1967 to 1968, and the Connecticut State Medical Society where he served on the Committee on Perinatal Morbidity and Mortality from 1969 to 1971. Dr. Laubstein died 12 March 1996 at the age of 63.

PASCAL, THOMAS J., Rush Medical College, University of Chicago, 1932. For 52 years, Dr. Pascal served as a general surgeon at Bridgeport Hospital. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Pascal died 28 February 1996 at the age of 90.

PASTERNAK, HERBERT S., State University of New York College of Medicine, 1960. Dr. Pasternak was an orthopaedic surgeon specializing in joint replacement surgery. He served as Chief of Joint Replacement Service at Hartford Hospital, where he practiced for 27 years, and as Clinical Professor of Orthopaedic Surgery at the University of Connecticut, and served as chief of joint replacement services at the hospital. Active in many professional organizations relating to orthopaedics, Dr. Pasternak was a member of the Hartford County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1980 to 1982, and the Connecticut State Medical Society. Dr. Pasternak died 20 April 1996 at the age of 61.

SHAFTO, WILLIAM A., Faculty of Medicine University of Edinburgh, Scotland, 1960. Dr. Shafto maintained a general practice in Danbury and was associated with Danbury Hospital. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Shafto died 11 April 1996 at the age of 63.

SHOLLER, NICHOLAS A., Hahnemann Medical College and Hospital, 1943. Dr. Sholler retired from his private practice of internal medicine and cardiology in 1984. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Sholler died 1 April 1996 at the age of 83.

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BOOK REVIEW

Measuring Clinical Care—A Guide for Physician Executives
Edited by Stephen C. Schoenbaum, M.D., M.P.H.
American College of Physician Executives, Suite 200, 4890 West Kennedy Boulevard, Tampa, FL 33609
(813) 287-2000, ISBN: 0-924674-36-9
Tampa, Florida; Hillsboro Printing Company

Competitive market pressures have spawned these "turbulent times of health care reform and health system restructuring." Though unsettling for many, most, on balance, would agree that fiscal reform, at the very least, is necessary. Likewise, objective observers understand that, as excess is eliminated and providers become lean and low priced, quality will be factored into value determination and become "a real discriminator in the marketplace." It will be impossible to survive in health care if providers "continue to produce yesterday's outcomes."

To improve care and control costs, hospitals, clinics, health plans, physicians, nurses, laboratories, product manufacturers, and even patients, must learn to collect, analyze, and/or, at least, appreciate information about the quality and effectiveness of the care and services health care providers routinely deliver.

To achieve these important societal goals will require careful analysis of meaningful data (measurements) and broad-based education—the new information developed will need to "flow seamlessly among all the players."

Measuring Clinical Care—A Guide for Physician Executives, edited by Stephen C. Schoenbaum, M.D., M.P.H., is a valuable, concise, well-written "series of essays on aspects of measurement" in health care. The monograph is "readable" and effectively defends the thesis that "measurement" does, and will more completely, "drive quality improvement." The position that physician executives will need more detailed and accurate information to provide care that produces optimal patient outcomes delivered in the most cost-effective manner is compellingly made.

Though there is redundancy in the first nine chapters as purchasers, consumers, physicians, and managers explain what they expect from measurements of care, it is, indeed, obvious that there is a common set of needs "for information among persons of very different perspectives."

In the second section, the chapters on adjustment for case mix, listening to patients, and feedback of performance profiles are relevant and important whereas, conversely, the chapter on developing sophisticated experimental designs seems a bit out of place or more relevant for a formal course in biostatistics and/or epidemiology.

The final section is, for this reader, especially relevant given my initial prejudice that compensation (base and incentive/disincentive) must be related to clinical performance. Instruments to accurately, reliably, and consistently measure physician productivity in all facets of clinical, academic, and administrative life are not beyond our creative ability. This section honestly recognizes the "complexity surrounding compensation as a motivation of behavior," and Berwick's chapter, especially, entitled "The Toxicity of Pay for Performance," is a thoughtful essay which tempered my enthusiasm. The positive and negative aspects of productivity-based compensation are evenhandedly presented in subsequent essays in this section, as are solid ideas to quantitatively assess performance. The position that "evaluation instruments to judge the effectiveness of clinical guidelines" are necessary to make quality assessments rigorous and scientific is well defended and very pertinent given universal acceptance of a concept, often more metaphysical than real, by so many.

The book does succeed in convincing the reader that "an era of understanding about the nature and complexity of outcomes measurement is just dawning" and that good information will "support improvement of care."

Practically speaking, physician executives will understand that "successful health care alliances of the future, through good outcomes data, customer satisfaction surveys, systems and process performance data, and financial and other data, will be able to establish their value and thereby win contracts and stay in business."

Peter J. Deckers, M.D.
Dean, School of Medicine, University of Connecticut

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

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package. Send CV to: Search Committee, United Community Services, Inc., 34 East Town Street, Norwich, CT 06360, telephone (860) 889-2375, fax (860) 889-3450.

Full-time or part-time position available for a BC/BE internist or family practitioner in progressive, well-established primary care group practice in Branford. Highly competitive salary and benefit package; very pleasant working conditions; located on beautiful Connecticut shoreline in family community. Please send CV to: CSMS c/o PC/HA.

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Retired generalist with experience in general, occupational and emergency medicine including small injuries and musculoskeletal syndromes is available part-time in south-central Connecticut. Please respond to CSMS c/o GP/SJ

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Available July 1996. American Board eligible. Licensed in New York. M.D. at State University of New York, Brooklyn, New York. Internship at Staten Island University, Brookdale Hospital. Residency at New York University, Rusk Institute. Seeking a full-time position in a practice to encompass physical medicine/sports medicine/NEMG. Please respond to: Nicholas R. Panaro, M.D., 107 Drew Lane, Carmel, NY 10512, telephone (914) 278-8040.

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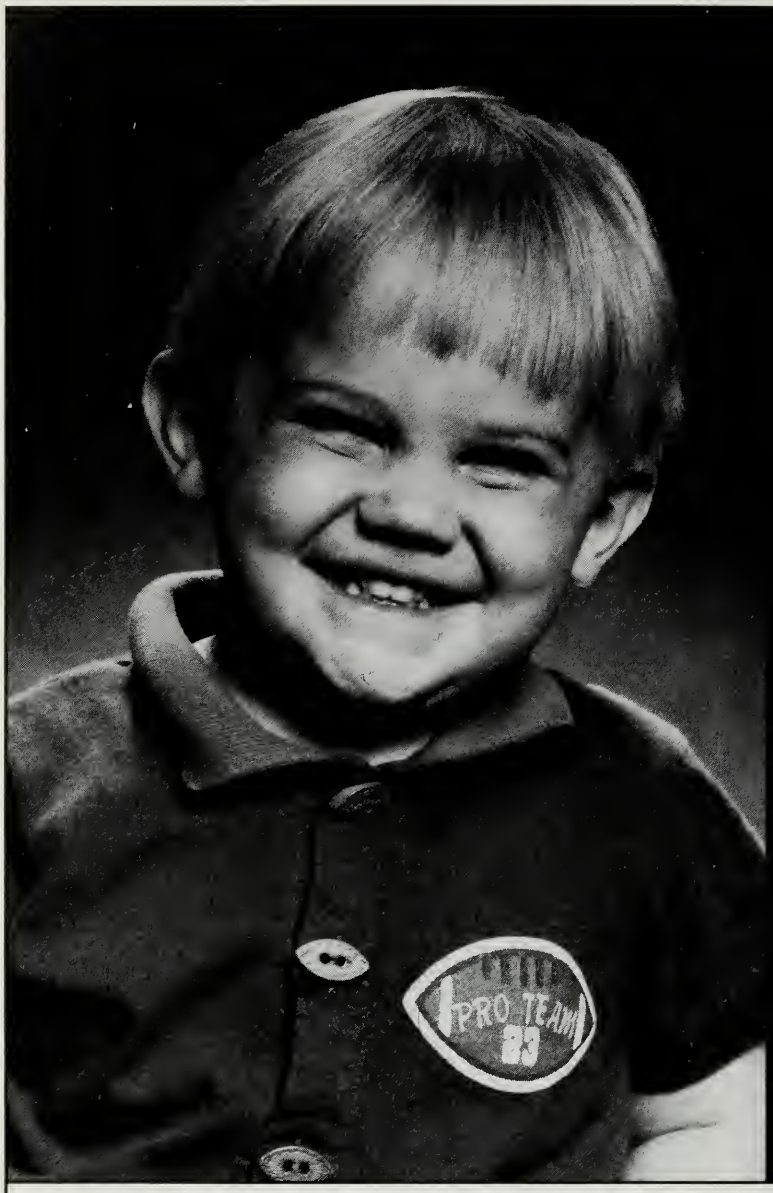

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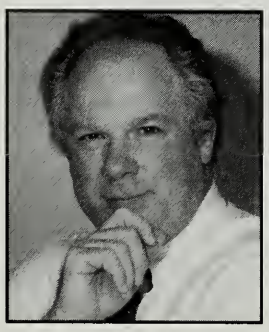

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Organ Transplantation at the Hartford Transplant Center

ROBERT T. SCHWEIZER, M.D., STANLEY A. BARTUS, M.D., DAVID HULL, M.D., GEORGE A. PERDRIZET, M.D., MARY SWANSON, R.N., HENRY B.C. LOW, M.D., ROBERT GALLAGHER, M.D., JAMES DOUGHERTY, M.D., ROBERT ROSSON, M.D., JEFFREY HYAMS, M.D., JOHN D'AVELLA, M.D., MAJID RASOULPOUR, M.D., PAUL SULLIVAN, M.D., AND LAURINE BOW, Ph.D.

ABSTRACT—Over 1,243 organ transplants have been performed at the Hartford Transplant Center over the past two decades. Survival in kidney, heart, liver, and pancreas patients is at or above the national average. Hartford was one of the first centers to use triple immunosuppression, which significantly improved survival in kidney transplantation. For recipients of kidneys from living related donors and cadaveric kidneys, two-year actuarial graft survival has been 98% and 83%, respectively, over the last five years. For heart and liver transplants, two-year survival has been 79% and 67%, respectively. Despite high success rates at most transplant centers, donor organs remain scarce. This problem needs to be addressed through increased cooperative efforts in the health-care community and the general public.

Appreviations Used in Text
DST=donor-specific blood transfusions
DR=donor related
ATN=acute tublular necrosis
TIPS=transjugular intrahepatic portal systemic shunt
HLA=human leukocyte antigen
UNOS=United Network for Organ Sharing

ROBERT T. SCHWEIZER, M.D., Director, Division of Transplantation, Department of Surgery, Hartford Hospital, Hartford; Professor of Surgery, University of Connecticut School of Medicine, Farmington. STANLEY A. BARTUS, M.D., DAVID HULL, M.D., GEORGE A. PERDRIZET, M.D., PH.D., MARY SWANSON, R.N., M.B.A., Manager, Transplant Center, HENRY B.C. LOW, M.D., ROBERT GALLAGHER, M.D., all Department of Surgery, Hartford Hospital. JAMES DOUGHERTY, M.D., ROBERT ROSSON, M.D., JEFFREY HYAMS, M.D., JOHN D'AVELLA, M.D., all Department of Medicine, Hartford Hospital, Hartford. MAJID RASOULPOUR, M.D., Department of Pediatrics, Hartford Hospital, Hartford. PAUL SULLIVAN, M.D., Department of Medicine, Hartford Hospital, Hartford. LAURINE BOW, Ph.D., Department of Research, Hartford Hospital, Hartford.

Introduction

CLINICAL organ transplantation was in its fledgling years when Hartford Hospital performed its first kidney transplant in March 1971. Methods to counteract the inevitable rejection process were limited then to two drugs, azathioprine (Imuran®, Burroughs Wellcome) and prednisone. Despite difficulties, such as high infection rates, the therapy of kidney transplantation gradually improved and then plateaued. During that time, the Hartford Transplant Center studied the techniques of heart, liver, and pancreas transplantation; our research laboratories, and those throughout the world, were busy investigating many areas in the exciting new field of transplantation.

A major breakthrough came with the discovery of a powerful yet less injurious immunosuppressive drug, cyclosporine (Sandimmune®, Sandoz). When used with azathioprine and prednisone, kidney graft and patient survival dramatically improved, and liver and heart transplantation could be offered as clinical therapies. This report will review the past 24 years of organ transplantation at Hartford Hospital, from 21 March 1971 through May 1995.

Methods

All recipients suffered from advancing organ failure and met standard criteria, for example: absence of cancer, abstinence from sustained substance abuse, psychological stability, and a reasonable chance for a meaningful sur-

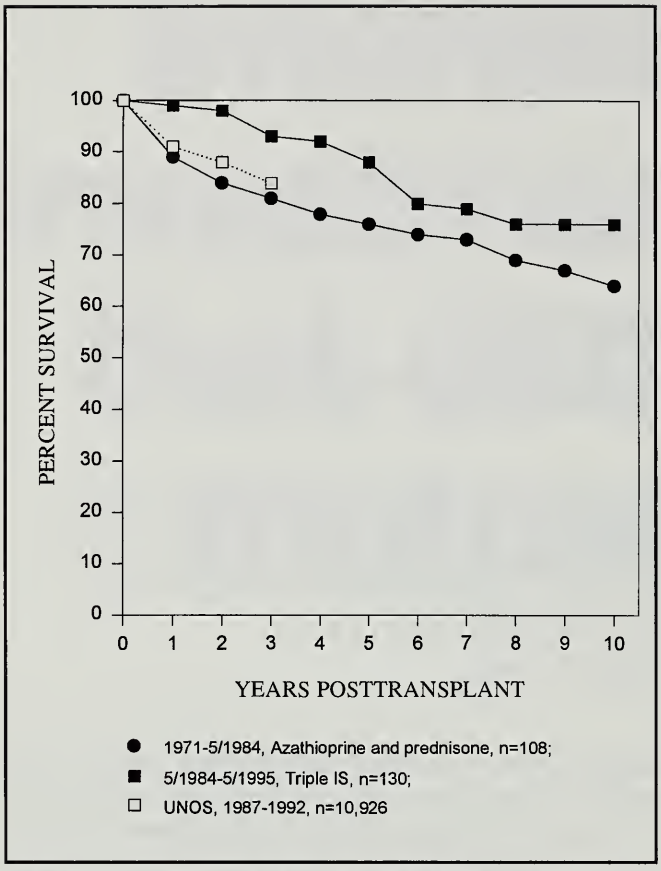

Figure 1.—Living, related kidney donor graft survival.

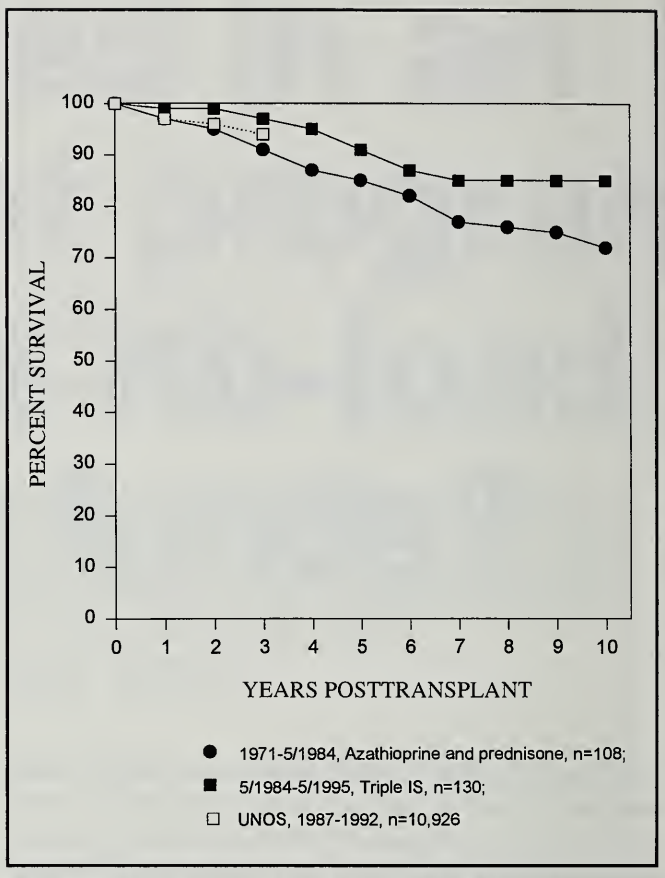

Figure 2.—Living, related kidney donor patient survival.

vival. Our protocol for immunosuppression has been previously published.[1] In brief, the earlier method used the combination of azathioprine and prednisone. Cyclosporine was introduced in December 1983, and in May 1984 the three immunosuppressive drugs were used in combination with a goal of three-way synergism (triple IS). More recently, tacrolimus (Prograf™, Fujisawa), formerly known as FK506, has been introduced. This drug is similar to cyclosporine and is currently used selectively in liver, pancreas, and kidney transplant recipients, primarily when stronger immunosuppression is needed. The technique of donor-specific blood transfusions (DST) was used from 1980 to 1984.[2]

Rejection episodes were treated primarily with increased corticosteroids, usually in a reduced-dosage protocol.[1] Cytolytic therapy (causing lysis of lymphocytes) was used immediately after transplantation in selected recipients and for reversal of steroid-resistant rejection episodes. Both antithymocyte globulin, (Atgam®, Upjohn) and the murine monoclonal antibody OKT3 (Orthoclone®, Ortho Biotech) have been used.[3] Measures to prevent infectious complications included the topical application of antibiotics during surgery,[4] and posttransplant antibiotic and antiviral prophylaxis therapy.

Organ donors have been provided by a cooperative effort with 20 hospitals in Connecticut, using standard criteria. A cold-storage method of preservation for kidney and liver transplantation uses an electrolyte solution similar to intracellular composition.[5] For longer preservation times, cadaver kidneys are preserved by machine perfusion using a plasma-like perfusate.[6] Hearts are preserved with a cold-storage solution, which is adequate for up to four hours,[7] and for liver storage up to 12 hours. A special laboratory for the serological determination of histocompatibility between donors and recipients was developed in the 1970s.[8] The detection of preformed antibodies against donor antigen is performed in this laboratory utilizing the extended antiglobulin technique.[9] DNA typing methods have recently been developed and are used selectively.

Results are presented as computer-generated, actuarial survival curves using the Mantel-Haenszel test for comparison of curves.[10] One- or two-year survival data were presented because those times provide a benchmark data point; most survival curves from reporting transplant centers are parallel thereafter.[11]

Results

Renal.—A total of 1,041 kidney transplants were performed between March 1971 and 1 June 1995; 246 were from living, related donors and 795 from cadavers. Ages of recipients ranged from two years to 70 years, with a mean of 39 years. The results of kidney transplantation for

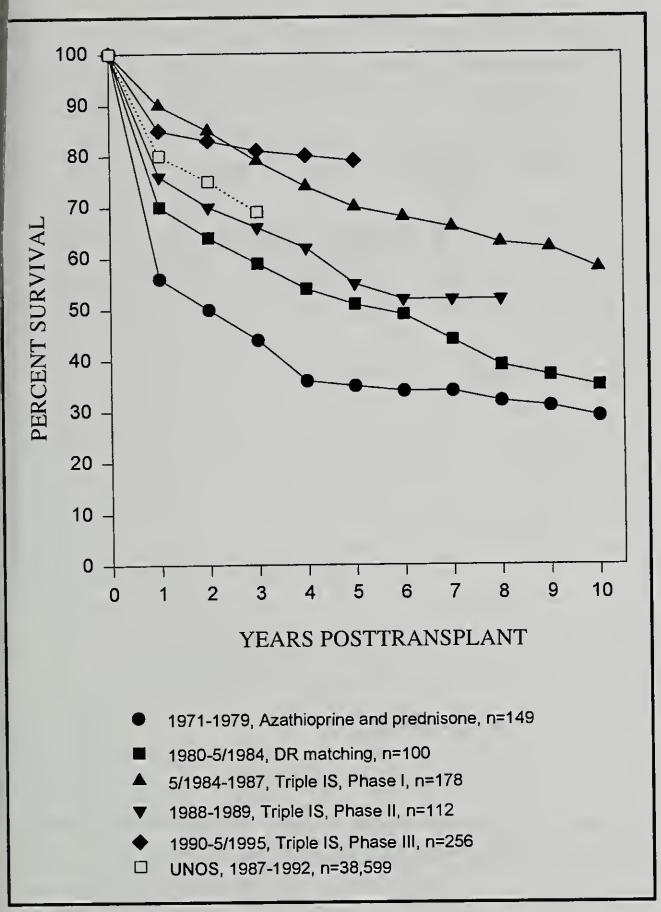

Figure 3.—Cadaver kidney graft survival.

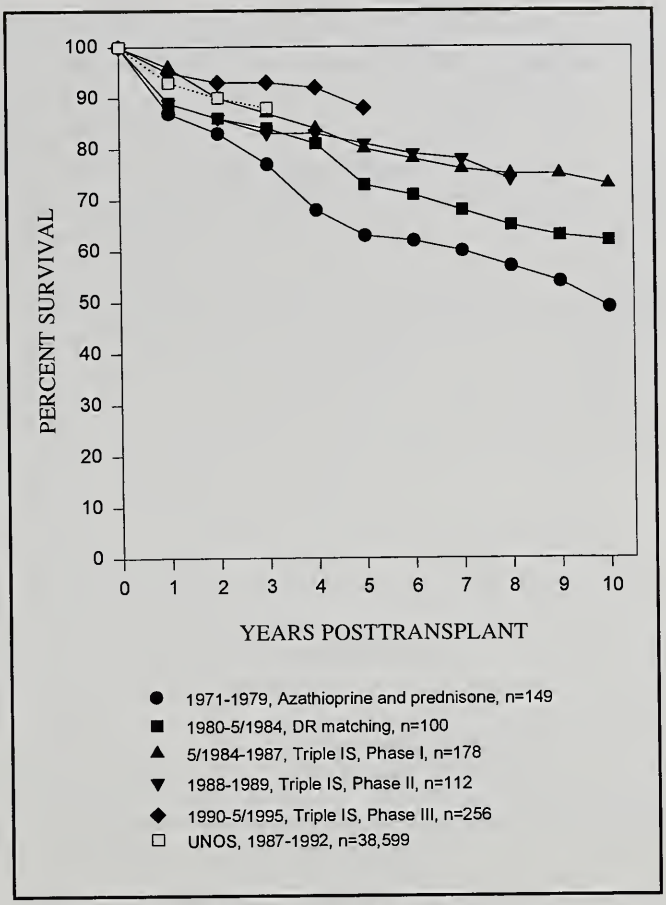

Figure 4.—Cadaver kidney patient survival.

all recipients of grafts from living, related donors (including retransplants and transplants in children and adolescents) are shown in Fig. 1, and the survival rates for those recipients in Fig. 2. The first kidney transplant recipient continues to have adequate function in the kidney that she received from her sister, now for almost 25 years. Donor-specific blood transfusions (DST) improved kidney graft survival, but beginning in 1984, triple immunosuppression was used in place of DST.

The results for all cadaver kidney transplants are shown in Figure 3. Results improved significantly with the use of triple immunosuppression (P=<.005), although within this latter group, three phases can be identified. In Phase I, from 1984 to 1987, cytolytic therapy with antithymocyte globulin was used for rescue therapy, ie, for rejection activity resistant to steroid therapy. In Phase II, OKT3 was used in the recommended 5-mg/injection daily dose for seven to 10 days.[12] Compared with Phase I, graft survival decreased. Starting in 1990, we reduced the dose of OKT3, increased prophylactic measures to prevent infectious complications, and experienced a decrease in postoperative oliguric renal failure. We believe these changes resulted in the significantly improved results, indicated as Phase III in Fig 3.

Of special interest in our recent results is the improved long-term graft survival curve for first cadaver-kidney transplant recipients since 1990. The T 1/2, ie, the point of 50% graft survival, is 17.5 years at our center, compared with the national average of 9.1 years (personal communication with Dr. Cecka, United Network for Organ Sharing [UNOS*] Scientific Renal Transplant Registry, University of California, Los Angeles [UCLA]). Patient survival for all cadaver kidney transplant recipients is shown in Fig. 4. The best results are in Phase III, using triple immunosuppression and reduced-dose OKT3®.

Forty kidney transplants were performed in 37 patients under 18 years of age, 23 with kidneys from cadaver donors and 17 from living, related donors. The results at a two-year follow-up are shown in Table 1. In this group, the longest survival time with a cadaver kidney (original graft) is now 19 years, and with a kidney from a living, related donor (father), 23 years. None of the 37 patients has developed cancer and most have had complete rehabilitation, eg, they obtained college degrees and full employment after their transplants.

*United Network for Organ Sharing is the federally supported organization maintaining a national organ procurement and distribution network and transplant registry.

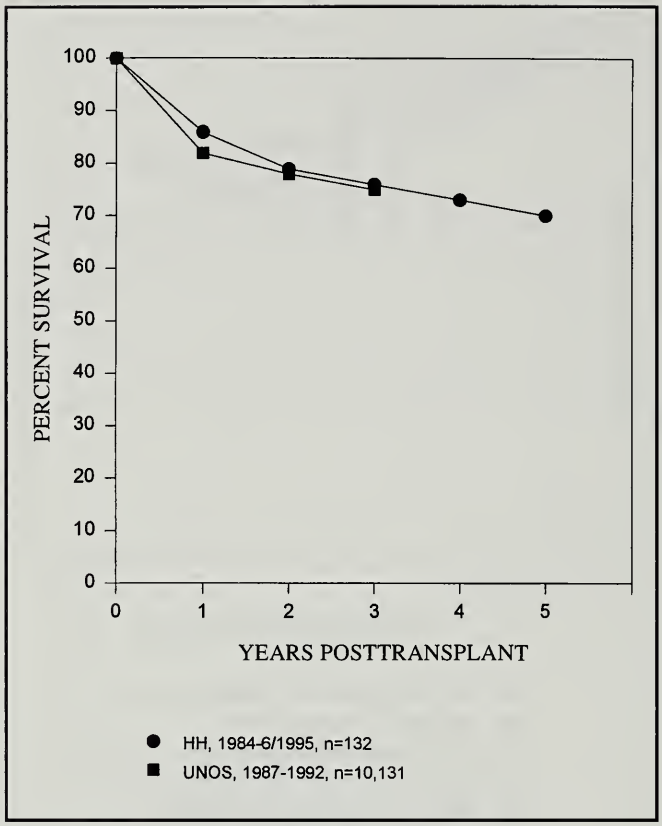

Figure 5.—Heart transplantation survival.

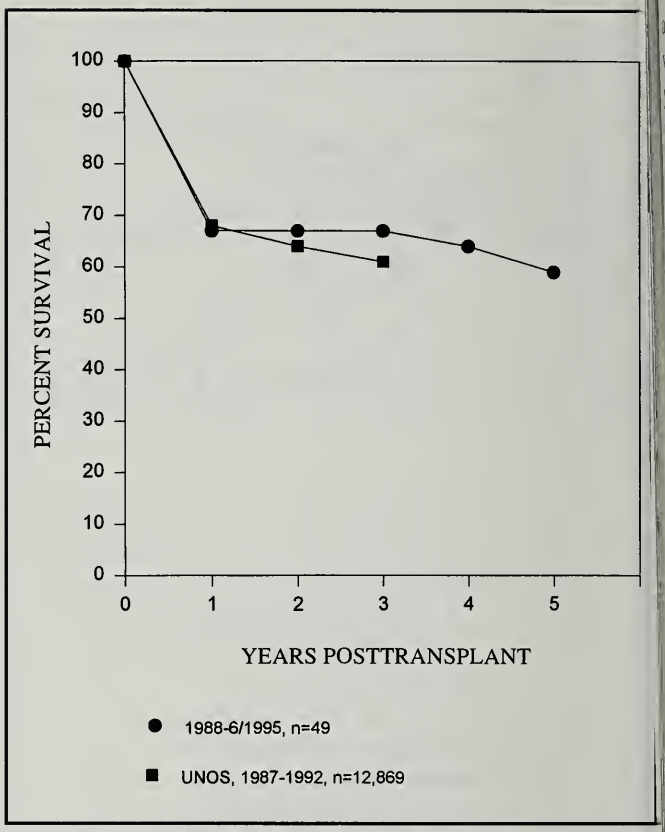

Figure 6.—Liver transplantation survival.

Histocompatibility testing was most important for matching relatives to recipients in living related kidney donations, and for the detection of preformed anti-HLA (human leukocyte antigen) antibodies in recipients. Prospective matching of donor related (DR) locus antigens was conducted for four years for all cadaver kidney transplants before cyclosporine use (Fig. 3), resulting in significant improvement ($P<.005$). DR matching is now used for recipients undergoing retransplantation.

Contributions to the field of renal transplantation as a result of clinical and laboratory investigation have been numerous. Problems of machine preservation and cadaver kidney procurement were early interests that resulted in measures to reduce posttransplant oliguric renal failure (acute tublular necrosis [ATN]).[13,14] The ATN rate had been about 50% but now averages 25%. Research in histocompatibility typing resulted in methods to improve and broaden the use of donor-specific blood transfusions,[2,15,16] and the development of sera used for typing of DR locus histocompatible antigens. Other transplant immunology studies resulted in several publications.[17-19]

Heart.—A total of 132 heart transplants were performed from 1984 to June 1995. Patients ranged in age from six to 67 years, with a mean of 51 years. The results are shown in Fig. 5, compared with the national average. The first recipient continues to have normal cardiac function now, 11 years posttransplant. He works full-time and has fathered two children. Laboratory studies in heart transplantation include methods to improve preservation and the development of new surgical techniques.

Liver.—Seventy liver transplants were performed, beginning in 1984. Patients ranged in age from eight months to 63 years, with a mean of 39 years. The results since 1988, a point when new technical advances became avail-

Table 1.—Results of Kidney Transplants in Children and Adolescents at Two Years Follow-up

	Living, Related Donor		Cadaveric Donor	
	Pre-CyA	With CyA	Pre-CyA	With CyA
Graft Survival	11/12 (92%)	4/4 (100%)	10/15 (67%)	7/8 (88%)
Patient Survival	12/12 (100%)	4/4 (100%)	14/15 (93%)	7/8 (88%)

Survival data include three patients receiving second renal transplants, two cadaveric.
Pre-CyA = immunosuppression before cyclosporine, using azathioprine and prednisone.

able, are shown in Fig. 6. Before 1988, operative mortality was 28% (within one-month posttransplant), and two-year patient survival was 33%. Since 1988, operative mortality has been 11%, and two-year patient survival is 67% (Fig. 6). Actuarial two-year patient survival since 1992 has been 76%.

Contributions of our center to the field of liver transplantation include methods of bile duct reconstruction,[20] the development of a venous bypass for use in children (unpublished), reduced-size axillary liver transplantation,[21,22] clinical experience with the transplantation of neuroendocrine tumors metastatic to the liver,[23,24] transplantation for fulminant liver failure,[25] and modification of a rinse to remove metabolites accumulating in the liver during preservation. Our center also had early experience with the transjugular intrahepatic portal systemic shunt (TIPS) in liver transplantation.

Pancreas.—Thirteen pancreas transplants were performed in combination with kidney transplants from the same cadaver donors. All pancreas grafts functioned immediately. At one-year follow-up, 10 of 13 (77%) pancreas grafts were functioning, and overall patient survival was 92%. In later follow-up, one pancreas failed from chronic rejection. One kidney transplant rejected, and one patient was successfully retransplanted following kidney loss due to a technical complication. A total of three patients died, one from septic complications, one from cardiovascular disease (presumed myocardial), and one from cancer (lymphoma). Our laboratory work in support of pancreas transplantation has included detection of rejection using platelets labeled with ^{111}Indium,[26] methods to improve preservation,[27] and the use of silicone for management of the pancreatic duct.[28]

Discussion

Our organ transplant program began in part from a suggestion by the pioneer transplant surgeon, Thomas Starzl, M.D., Ph.D., while a visiting surgeon at Hartford Hospital in 1964. There were very few hospitals performing kidney transplantation at that time, and even when the Hartford program began in 1971, almost all of the transplant activity was at university hospitals. The needed ingredients for a successful program, however, were in place at Hartford Hospital. James Foster, M.D., the Director of Surgery at Hartford Hospital, and Ralph Reinfrank, M.D., Director of Medicine, began planning for renal transplantation in 1968. Bernard Lytton, M.D., Chairman of the Department of Urology at Yale University, had performed renal transplants and offered valuable advice. Laboratory experience and specialized training were obtained by Drs. Foster and Schweizer at the University of California in San Francisco, then the busiest center in the world. Mark Izard, M.D., was treating several renal failure patients with hemodialysis. On 25 March 1971, the first renal transplant was performed using perfectly matched (HLA identical) sisters. Even at that time, plans and training were underway for the transplantation of hearts, livers, and pancreas.

When the first reports of the use of cyclosporine were made in Rome in 1978, the final stage for advanced organ transplantation was set. Cyclosporine was released by the FDA in December 1983, and it was immediately used in kidney transplant recipients, improving results and adding valuable knowledge to be applied to the more difficult heart and liver transplant procedures. Both of these latter two organs were transplanted at Hartford Hospital in 1984, the heart recipient becoming the first successful heart transplant in Connecticut.

In 1984, fewer than 20 centers in the United States were performing heart and liver transplantation. The heart program began with excellent results, with no operative mortality in 70 consecutive heart transplants. The program gained special federal recognition in 1989 by winning approval to perform heart transplants in Medicare patients. It was only the second center so designated in New England and the 14th in the nation. The rapid movement of new knowledge from laboratory and clinical investigations to clinical service was an important aspect of the Hartford transplant program.

In our first decade, however, the major deterrent to widespread successful organ transplantation was not the technical aspects, but side effects from the immunosuppressive medications. High doses of corticosteroids were especially troublesome. Fortunately, cyclosporine had a dramatic impact because of its potency as an antirejection drug and greater selectivity in preventing rejection. Animal studies found that when cyclosporine was used in combination with azathioprine and prednisone, a synergistic antirejection effect was evident, while the side effects of immunosuppressants decreased because of lower dosage. We used that triple immunosuppressive combination in human kidney transplants beginning in 1984. Results immediately improved, and the previous high level of septic complications diminished.[1] Hartford was one of the first centers in the world to begin using this immunosuppressive method. With even better immunosuppressants today, rejection is usually controlled.

The major problem facing patients in need of organ transplantation today is the paucity of organ donors. The problem, however, is not the lack of donors, but a failure to make suitable donors available for transplantation. The cause of this failure includes many factors, such as preconceived prejudices against organ donation, quasi-religious or magical beliefs (no major Western religion opposes organ donation), and even ambivalence by health-care providers, some of whom may have patients who could benefit from organ transplantation! Fortunately, several

of the hospitals affiliated with our organ procurement organization cooperate with organ donation despite the fact that those hospitals do not perform organ transplants. This cooperative effort includes the St. Francis Hospital and Medical Center in Hartford, New Britain General Hospital, William Backus Hospital in Norwich, and Lawrence and Memorial Hospital in New London.

The need for organ transplantation has become enormous because of the improved results. Approximately 29,000 people in the United States are waiting for renal transplants, while the annual transplant rate has remained between 8,000 and 10,000.

The improved results in renal transplantation have also resulted in a decrease in the cost of therapy for end-stage renal disease. Management of the patient with a successful kidney transplant is considerably less expensive than dialysis therapy.[29] Also, the improved health of the transplanted patients has resulted in a better rehabilitation rate in comparison with those on long-term dialysis. An indication of the extent of the improved medical condition of these patients is the fact that most young women who have had a successful renal transplant can undergo successful pregnancy. The first comprehensive survey on that subject was conducted by our center.[30]

Since many organ transplant patients return to full-time employment, society benefits by the reduction in disability payments. The economic importance of organ transplantation is further expanded because more patients can now undergo successful transplantations.

Now that organ transplant patients are surviving longer, chronic rejection has emerged as a problem. Biologic factors, such as antigen matching, are important in reducing late graft loss, and we continue to distribute cadaver kidneys on the basis of histocompatibility matching. We have discovered, however, that one of the major causes of late graft loss is not primarily biologic—it is patient noncompliance with medications.[31,32] Noncompliance as a cause of graft rejection was a surprise to the organ transplant community, since it was thought that the importance of graft survival and the need for immunosuppression were so obviously connected that recipients would never become noncompliant. Fortunately, serious noncompliance is not the rule; at least 80% of our recipients are fully compliant.

The importance of organ transplantation lies in the high success rate that can now be achieved for diseases that are often otherwise fatal. With increased cooperation for organ donation, the Hartford Transplant Center will, we hope, be able to bring successful organ transplantation to a greater number of patients. That is our goal as we enter a second quarter century of service.

Acknowledgments

Our gratitude extends to a large number of individuals who have contributed to the success of this program, especially those of the Transplant Center which include clinical and organ procurement coordinators, organ procurement and preservation technicians, histocompatibility laboratory technicians, research laboratory assistants, fellows, and resident staff. Of special importance were the many physicians who referred patients to us for transplantation and the many individuals who assisted in their pretransplant care and evaluation and in posttransplant management. The pioneering efforts of James H. Foster, M.D. and Peter J. Deckers, M.D., both former directors of the Department of Surgery at Hartford Hospital, are also gratefully acknowledged. The assistance and guidance by Hartford Hospital Administration, especially the personal efforts of John Springer, John Meehan, and Bernadette Warren, R.N. of the Department of Nursing, were of critical importance.

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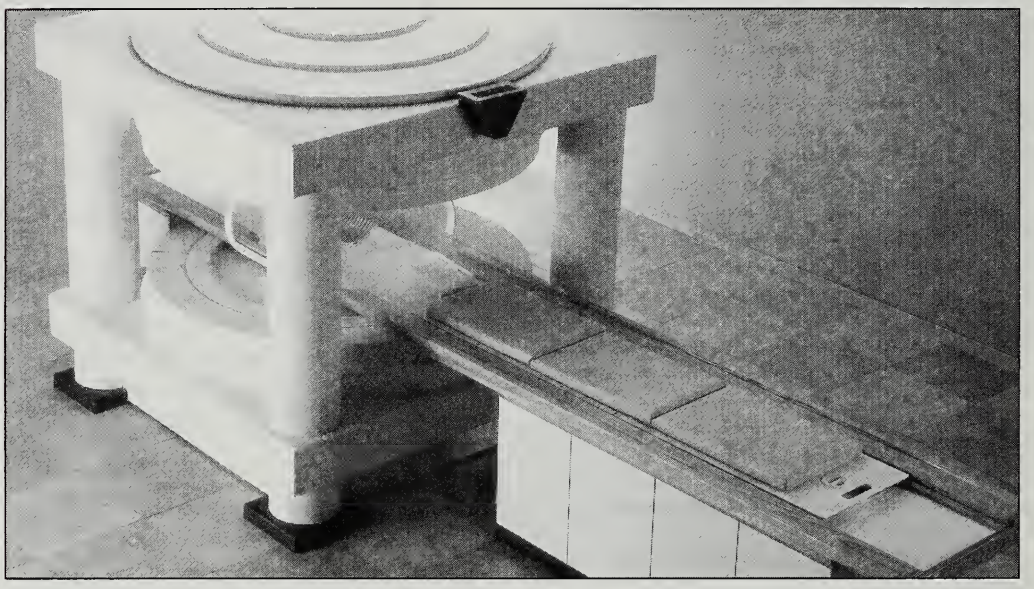

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The Current Treatment of Cervical Disc Rupture

MELVILLE P. ROBERTS, M.D. AND FRANKLIN ROBINSON, M. D.

CERVICAL disc rupture, although less common than ruptured lumbar disc,[1] is an important cause of disabling pain in the neck, shoulder, and upper extremity. The pain is usually produced by compression of a nerve root by herniated nucleus pulposus, spondylitic spur, or a combination of both. Ruptured cervical disc was reported as early as 1928 by Stookey.[2] He believed the extruded disc material to be a benign cartilaginous neoplasm, a chondroma, but later described the true nature of the lesion in his report on the surgical treatment of spinal cord compression due to disc rupture.[3] In 1931, Elsberg reported a series of cervical disc ruptures with spinal cord and nerve root compression.[4] Nachlas, in 1934, described a syndrome of pseudo-angina pectoris, radiating pain which he attributed to compression of nerve roots by hypertrophic changes in the cervical spine.[5] In 1944 Spurling and Scoville, published a series of lateral cervical disc ruptures and treatment by keyhole laminectomy, a method frequently used currently for soft lateral disc herniations.[6] Robinson and Smith in 1955 described anterolateral disc removal and interbody fusion for cervical disc syndrome.[7] They further refined the procedure and published results of their operation in 1958.[8] Cloward reported a modification of the Robinson-Smith technique in 1958.[9] Both methods are used today, as well as the posterior keyhole laminectomy of Spurling and Scoville.

The term cervical disc rupture or herniation is often used in a broad sense, not only to refer to nerve root compression by pieces of extruded nucleus pulposus, but also to describe the so-called hard disc rupture, an osteoarthritic spur compressing either a nerve root and/or the spinal cord. Scoville defined the following five categories: 1) the lateral soft disc rupture, 2) the lateral hard or osteoarthritic disc, 3) the central bar or ridge disc, 4) the central soft disc, and 5) fracture dislocation with disc injury.[10,11] In a series of 2,032 cervical laminectomies performed at the Hartford Hospital,[12] 85% of the cases had lateral disc ruptures which caused root compression, the majority with soft extruded fragments; some had soft fragments and an osteoarthritic spur, and a few had only an osteoarthritic spur. A central arthritic ridge producing nerve root and/or cord compression made up 11% of the cases, while central soft disc herniation accounted for 4%. The most common level for disc rupture was C6-7, accounting for 54% of all cases. The C5-6 level was the next most frequent with 35% of cases. The C4-5 and C7-T1 levels were about equal in frequency at 5% and 6%, respectively. There were only two cases of soft disc rupture at C3-4. Ruptures at T1-2 were not included in the series.

Diagnosis

Lateral soft disc rupture with root compression is characterized by neck stiffness and pain in the neck, shoulder, and arm. There may be no history of trauma. In our experience, acute soft disc herniation is uncommonly seen with typical whiplash injury or work-related incidents. Frequently the patient awakens in the morning with the initial symptoms. Signs and symptoms are usually related to the specific nerve root affected. Pain may radiate into the forearm or hand. There may be vague numbness and tingling in the entire upper extremity, and the patient may complain of numbness and tingling in one or more fingers

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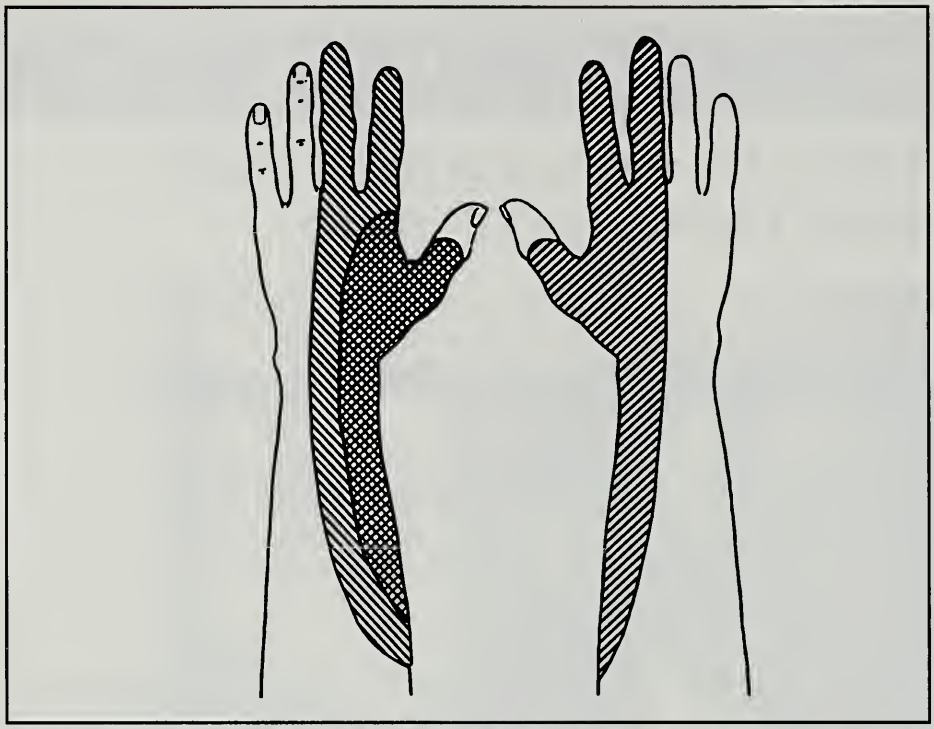

Figure 1.—Dorsal and volar areas of sensory loss and numbness with disc rupture compressing the C6 root (cross hatched area), and C7 root (lined area) as described by Spurling and Scoville.[6]

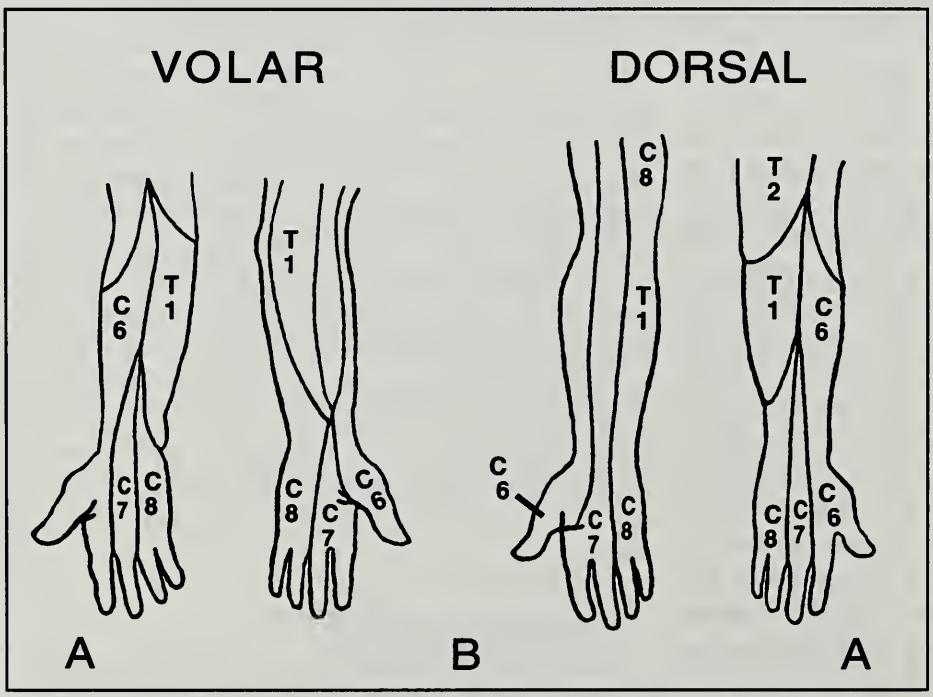

Figure 2.—Variation in dermatome maps. A; as described by Foester. B; as described by Keegan and Garrett.

(Fig. 1) Occipital headache is sometimes present on the side of the rupture although headache is more likely to be associated with cervical spondylosis. Weakness in the arm, forearm, or hand is common. Spurling's sign, also known as the "neck compression test," is often present, ie, tilting the head and neck toward the painful side may increase the pain while tilting the head away from the side of the pain affords relief.

With compression of the C6 nerve root at the C5-6 interspace there may be weakness of the biceps muscle and depression of the biceps reflex. Dysesthesias and sensory loss are frequently found in the thumb, index, and occasionally in the middle finger. The location of sensory loss and dysesthesias serves only as an approximate guide to the nerve root involved, as there is some variability of dermatome distribution. Two widely published dermatome maps, (Foester, and Keegan and Garrett), (Fig. 2), are not congruent. Weakness of the triceps muscle and depression of the triceps reflex are often seen with C7 nerve root compression at the C6-7 interspace, and sensory loss is likely to involve the index, middle, and ring fingers. Compression of the C8 root due to disc rupture at C7-T1 is commonly accompanied by weakness of all wrist extensors (except extensor carpi radialis), all flexors (except flexor carpi radialis), and all intrinsic hand muscles with numbness in the fourth and fifth fingers. Disc ruptures at C4-5 with C5 root involvement may cause deltoid, brachioradialis, biceps, supraspinatus, and infraspinatus weakness. In the two cases of C3-4 disc rupture from the Hartford Hospital series, both patients had neck pain and stiffness, with hypesthesia and hypalgesia over the lateral neck on the side of the rupture, but no accompanying motor deficit.

In cases of lateral hard disc rupture, the nerve root is compressed by an arthritic spur, often by narrowing of the neural foramen and facet hypertrophy. Pain may be intermittent and less acute than with lateral soft disc rupture. Spurling's sign is usually less evident or absent. As with soft rupture, specific signs and symptoms are determined by the level of nerve root involved. Pain may also be caused by an arthritic facet joint. Pain from the facet may be referred to the shoulder and upper extremity.

If the spinal trigeminal system is compressed by an osteophyte or ruptured disc, ear and facial pain or dysesthesias may result.

Because signs and symptoms of root compression may overlap or be incomplete, it is essential to confirm the diagnosis by magnetic resonance imaging (MRI), the preferred method for evaluating cervical spine lesions. In some instances plain radiographs may be of further help in differentiating between soft disc herniation and osteoarthritic spurs. Myelogram/computerized tomography (CT) should be used when MRI scan cannot be performed or when MRI scan findings are inconclusive. Soft lateral disc ruptures are usually well demonstrated as are spondylotic changes. We have not found electromyography (EMG) to be of value in the diagnosis of radiculopathy or in decision making with respect to the clinical management of patients with cervical disc rupture. The EMG diagnostic yield has been shown to be low, probably less than 20 percent, and when present to be of limited reliability.[13] We have not found it necessary or desirable to employ cervical discography for the diagnosis of cervical ruptured disc. Diagnostic cervical discography was found to provide insufficient predictive value to justify its pain, risks and complications.[14]

Treatment

Nonsurgical Treatment.—In acute lateral soft disc herniation nonsurgical treatment usually fails.[15] With hard disc rupture (spondylosis), the chances for symptomatic remission are somewhat better. An adequate trial of conservative treatment may be appropriate in either case. Anti-inflammatory drugs, analgesics, intermitent cervical halter traction (up to 14 lbs), and a soft cervical collar are all worth trying. Protracted physiotherapy beyond the short term (seven to 10 days) usually brings diminishing returns with disappointing results. Indications for surgical intervention during a trial of conservative treatment are signs of progressive neurological involvement or unremitting pain requiring narcotics.

Surgical Treatment.—The need for careful patient selection cannot be overemphasized if flawed surgical results are to be avoided. The surgical outcome in patients with neck, shoulder, and/or proximal arm pain who have multilevel degenerative disc disease with spondylosis may be disappointing, especially when complicated by compensation claims or liability issues.

With acute soft disc rupture with an extruded fragment, and the risk of permanent nerve root or spinal cord damage and possible quadriplegia, the only rational treatment is prompt surgery. Lateral disc rupture may be treated with keyhole laminecotmy or anterior discectomy, with or without interbody fusion. For lateral soft disc herniation in patients with little or no associated spondylosis, the posterior keyhole approach has some advantages over anterior discectomy with or without interbody fusion.[16] With the posterior operation there is little or no change in cervical spine biomechanics and the patient may resume all usual activities almost immediately. Complications due to grafting and loss of the intervertebral joint are avoided. Nerve root pain is promptly relieved and the wearing of a cervical collar for six to eight weeks is unnecessary. With anterior discectomy and fusion there is added stress to the adjacent cervical joints above and below the level of fusion, predisposing to accelerated degenerative changes, particularly at the level immediately above the fused joint.

In hard disc rupture with significant spondylosis at the level of the disc rupture, anterior discectomy and fusion is often the treatment of choice. Central bar ridges associated with infolding of the ligamentum flavum producing cord compression at multiple levels may require a combined anterior and posterior approach. Central soft disc herniations are best treated by the anterior approach because there is greater ease of exposure and retraction of neural structures is avoided. If anterior ridging is minimal and spinal cord compression is primarily due to facet arthropathy and infolding of the ligamentum flavum, laminectomy is the procedure of choice.

Results

With posterior keyhole laminectomy, good to excellent results were achieved in 95% of lateral soft disc rupture, in 64% with central hard disc, and 91% with central soft disc.[17] In the Hartford Hospital series there was only one case of recurrent disc rupture at the same level and side. The mortality rate was 0. There were two instances of central nervous system damage due to air embolism. To avoid this complication when the sitting position is used, preoperative echocardiography is advised to determine whether a potential right to left shunt of an air embolus might occur.[18]

Anterior discectomy and fusion for lateral soft disc rupture with little or no accompanying spondylosis had good to excellent results in 81% to 88% of cases.[19,20] In most cases we believe that the use of internal fixation hardware, such as metal plates and screws, is not only unnecessary but meddlesome. We also believe that the patient's own bone is best used for the graft. A graft can easily be taken from the anterior iliac crest. Some surgeons have advocated simply removing the disc and letting the intervertebral joint fuse spontaneously without inserting bone into the emptied space.[21] With this method postoperative neck and shoulder pain may persist or be greater, and pseudoarthrosis of the intervertebral joint is more likely to develop.[22] Anterior cervical discectomy with interbody fusion is preferred for patients with radiculopathy due only to osteoarthritic spurs.[23]

Conclusions

In summary, surgical relief of cervical disc rupture whether done posteriorly or anteriorly has proven to be safe and effective. A common error in managing patients has been protracted courses of nonsurgical treatment, particularly in the case of extruded soft lateral fragment with severe root compression. It is most important to make the diagnosis early and not to embark upon a lengthy course of physical therapy and anti-inflammatory drugs before making a precise diagnosis. Patients with signs and symptoms of cervical disc rupture should have prompt MRI scanning to avoid the therapeutic pitfall of treating a patient medically when only surgical intervention will solve the problem. Timely MRI scanning and treatment will help prevent serious permanent neurologic deficit, protracted pain, and excessive loss of time from work.

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Minimum Prostate-specific Antigen (PSA) Level Diagnostic of Prostate Cancer

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ABSTRACT—The PSA levels in benign prostatic hyperplasia (BPH) and prostate adenocarcinoma (PA) overlap, both below and above 4 to 10 ng/mL. There is no known PSA level diagnostic of PA. In this study, data were obtained in 160 consecutive men aged 58 to 87. Prebiopsy PSA levels (PSA-1) were obtained prior to "sextant" gun biopsies in 97 cases diagnosed as noncarcinoma, and in 56 cases diagnosed as PA. Multiple hematoxylin and eosin sections were made of each biopsy, and Gleason scores given the PAs. Cases were followed up to 30 months with repeated PSA levels and additional biopsies. The highest PSA level in NPA in this series was 54.6 ng/mL.

IN the 1970s a purified antigen obtained from reaction with mouse antibodies was found to be specific for human prostate;[1,2] the level of this prostate-specific antigen (PSA) could be measured in the blood, and it was identical to that produced by prostate carcinoma. Hybritech of San Diego, recognizing the potential clinical and commercial value of this discovery, produced a testing kit that was approved by the FDA in 1986 for management, but not diagnosis, of prostate carcinoma.[3] A biopsy was required for diagnosis. This venture became an immediate marketing success as the frequency of prostate carcinoma in the aging male population was recognized. Subsequently the company was acquired by Eli Lilly. Since then five PSA tests have received similar FDA clearance, two from Hybritech, and one each from Abbott Diagnostics, Tosoh, and Ciba Corning Diagnostic Corp. In August 1994, FDA approved Hybritech's tandem PSA test for screening, to be used in conjunction with a digital rectal examination (DRE), but still requiring biopsy for diagnosis. Most of the immunoreactive PSA in the blood of prostate cancer patients is bound to antiproteases, but may be free. Consequently PSA assays from different sources used by manufacturers may differ considerably, as determined by monoclonal and bioclonal assays.[4] The College of American Pathologists (CAP) Standards Committee indicated that the same manufacturer's material should be used in following a case, and that there should be primary reference material with a normal range of 4 ng/mL to 10 ng/mL. Since this would require restandardization and FDA approval, and, given the current commercial success, the manufacturers are unenthusiastic about following their recommendations. The tests are being widely used for screening in doctors' offices, and are surely responsible in part for the increased diagnosis of prostate cancer of over 6% per year, exceeding that of lung and breast cancer.

The CAP recommendation of PSA values of 4 to 10 ng/mL as the normal range is widely accepted, with the

Abbreviations Used in Text
PSA=Prostate-specific Antigen
PA=prostate adenocarcinoma
NPA=nonprostatic adenocarcinoma
PSA-1=first test, prebiopsy levels
DRE=digital rectal examination
CAP=College of American Pathologists
TUR=transurethral resection
BPH=benign prostatic hypertrophy

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knowledge that it is of variable sensitivity and not specific for carcinoma. There is increasing clinical suspicion when values are higher than 4 ng/mL, regardless of normal DRE, which does not detect nonpalpable stage *A* tumors that are considered potentially curable, and therefore the goal of screening.[5] There is no consensus on suitable end points, or whether there is a minimal level which is diagnostic of carcinoma. The purpose of this study is to correlate prebiopsy PSA values with biopsy findings, age of patients, and Gleason scores of prostate cancer differentiation in a Veterans Administration Hospital population.

Methods

Consecutive prostate biopsies during 1994 in a hospitalized veteran population were examined. In all but three cases, the material was obtained by the "sextant" gun from the apex, middle, and base of the prostate on each side. Three slides were prepared from each of these samples, with five or six serial sections per slide, all stained with hematoxylin and eosin. This resulted in about 100 sections from six areas, which were examined. In three cases, transurethral resection (TUR) produced multiple chips, each of which was examined. A serum PSA value was obtained prior to biopsy, using Abbott Diagnostics reagent, and the date and age of the patient recorded. In 16 of 22 cases when no carcinoma was found in the original biopsy and the PSA was 10 or above, follow-up PSA values were later obtained. Follow-up PSA values were also obtained in 40 selected cases, when the original PSA was between 4 and 10. Additional biopsies were obtained as indicated. When carcinoma was found, a Gleason grade was assigned on a scale of 2 to 10. Values of 2, 3, and 4 are considered well differentiated, 5 and 6 moderately well differentiated, 7, 8, and 9 poorly differentiated, and 10 undifferentiated.[6] These scores are based on the sum of the most and least well-differentiated areas. The author (R.Y.)

Table 1.— PSA Levels over10 ng/mL in Noncarcinomatous Biopsies

Number	PSA-1	BX-1†	PSA-2	PSA-3	PSA-4	PSA-5	BX-1‡
1	10.1 (10/93)*	(3/94)					
2	10.6 (3/93)	(7/93)	15.4 (1/94)	20.4 (11/94)	17.6 (3.95)	15.0 (6/95)	(2/94)
3	10.6 (5/94)						
4	11/1 (2/94)	(5/94)					
5	11.5 (5/94)	(6/94)	7.4 (1/95)				
6	11.6 (3/94)	(6/94)	0.6 (6/95)				Surg (6/94)
7	12.0 (1/93)	(2/93)	14.8 (3/94)	26.7 (11/94)			(11/94)
8	12.3 (10/93)	(2/94)	13.0 (6/94)	14.7 (11/94)	9.0 (5/95)		
9	13.1 (12/93)	(6/94)	13.6 (7/94)	9.0 (6/95)			
10	13.7 (12/93)	(5/94)	6.2 (9/94				
11	13.7 (3/94)	(5/94)	11.9 (10/94)	12.1 (4/95)			
12	14.7 (1/94)	(1/94)	9.6 (1/95)				
13	15.8 (1/94)	(2/94)					
14	17.0 (3/94)	(6/94)	14.6 (11/94)	16.9 (2/95)			
15	17.4 (7/94)	(7/94)	17.7 (1/95)	29.8 (6/95)			
16	17.8 (4/94)	(5/94)	8.1 (10/94)	9.9 (2/95)			
17	18.5 (5/94)	(4/94)	25.6 (5/95)				
18	18.9 (12/93)	(5/94)					
19	21.4 (10/93)	(2/94)	17.5 (6/94)	24.4 (4/95)			
20	30.8 (4/94)	(2/94)	2.4 (9/94)	3.3 (3/95)	1.6 (6/95)		Surg (2/94)
21	31.0 (5/94)	(5/94)					
22	54.6 (1/94)	(2/94)	7.9 (7/94)				

*Dates are in parentheses †First biosy ‡Second biopsy

Table 2.—Distribution of PSA with Age in Noncarcinoma Biopsies

PSA	AGE			
	61-64	65-69	70-74	75-87
0-3.9	6 (30%)	5 (26%)	8 (23%)	7 (30%)
4-9.9	12 (60%)	10 (53%)	19 (54%)	10 (44%)
0-9.9	18 (90%)	15 (79%)	27 (77%)	17 (74%)
10-14.9	1 (5%)	1 (5%)	4 (11%)	2 (9%)
15-19.9	0 (0%)	3 (16%)	2 (6%)	3 (13)
20-31	1 (5%)	0 (0%)	2 (6%)	1 (4%)
0-31	20 (100%)	19 (100%)	35 (100%)	23 (100%)

Table 3.—Distribution of PSA with Age in Carcinoma Biopsies

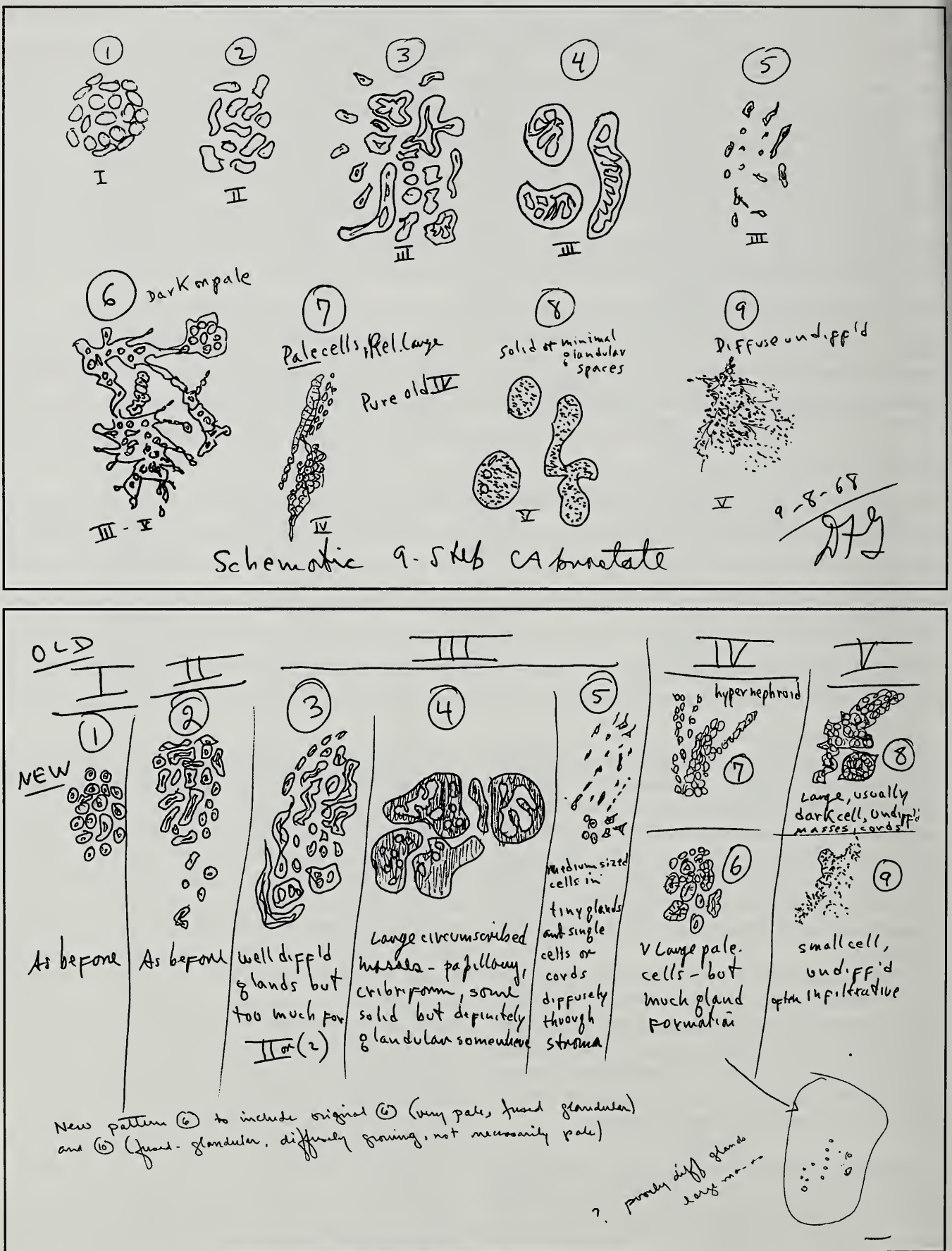
PSA	AGE			
	61-64	65-69	70-74	75-87
0-3.9	0 (0%)	4 (27%)	7 (35%)	2 (15%)
4-9.9	3 (38%)	2 (13%)	6 (30%)	4 (31%)
0-9.9	3 (38%)	6 (40%)	13 (65%)	6 (46%)
10-14.9	1 (12%)	2 (13%)	2 (10%)	3 (23%)
15-19.9	0 (0%)	3 (20%)	2 (10%)	1 (8%)
20-77.9	4 (50%)	4 (27%)	3 (15%)	3 (23%)
0-77.9	8 (100%)	15 (40%)	20 (100%)	13 (100%)

was a member of the V.A. Urological Research Group with Dr. Donald F. Gleason, and cooperated in the development of this grading scheme. It is somewhat subjective, but in hundreds of cases, we were seldom more than one grading value apart (Fig. 1, 2, and 3). Most of the current literature uses the Gleason 2 to 10 grading system. If the stage is added to the grade, in order to obtain even higher prognostic indication, values up to 15 are used. Stage was not used here.

The chi-square test with correction for continuity was used to compare the proportions of PSA-1 values <9.9 between groups. The *P*-value associated with the χ^2 statistic was then calculated.[7] Approximate correlation coefficient corresponding to Fisher's transformation was used to express the intensity of the association between two dichotomized variables in a four-fold table.[8]

Results

Nonprostatic adenocarcinoma (NPA).—The 97 cases diagnosed as NPA were benign prostatic hypertrophy (BPH) or chronic inflammation or both, with PSA-1 levels ranging from 4 to 54.6 ng/mL. PSA-1 levels of 0 to 3.9 were present in 25% of cases, 4 to 4.9 in 10%, 5 to 5.9 in 12%, 6 to 6.9 in 10%, 7 to 7.9 in 10%, 8 to 9.9 in 9%, and 10 to 54.6 in 24%. Sershon in 101 cases of BPH, found PSA levels >10 in 10%.[9] Times of follow-up varied up to 30 months. Of the 75 PSA-1 cases with levels <10 on follow-up, only three of these rose a little over 10.1 from 6.2 to 12.1 in 11 months, a second from 8.4 to 13.7 in 12 months, and back to 11.9 in 30 months, and a third from 9.3 to 11.1 in 16 months. There were 22 with PSA-1 levels 10-54.6. These are summarized in Table 1. In case 2, PSA rose from 10.6 to 20.4 in 15 months, and back to 15.0 in 27 months. In case 7, PSA rose from 12 to 26.7 in 22 months. A second biopsy was negative. In case 16, PSA rose from 17.4 to 29.8 in 11 months. In case 18, PSA rose from 18.5 to 26.5 in 12 months. The last three cases obviously require close follow-up. This is emphasized by the fact that one of the carcinoma cases (Gleason 5) was diagnosed after 18 months, with four PSAs of 15.9, 18.8, 15.4, and 16.2, and five biopsies. The highest PSA-1 level obtained was 54.6 in an individual with severe acute and chronic prostatitis. He was treated vigorously with antibiotics, his PSA dropped to 7.9 in five months, and he was thereafter clinically stable. Two cases with PSA-1 levels of 25.9 and 30.8 dropped to 1.6 after TUR, and another from 11.8 to 0.6 after prostatectomy.



Figs. 1 and 2—Original sketches by Dr. Donald F. Gleason from his note book in 1968. Fig. 2 shows how the nine patterns were reduced to five.

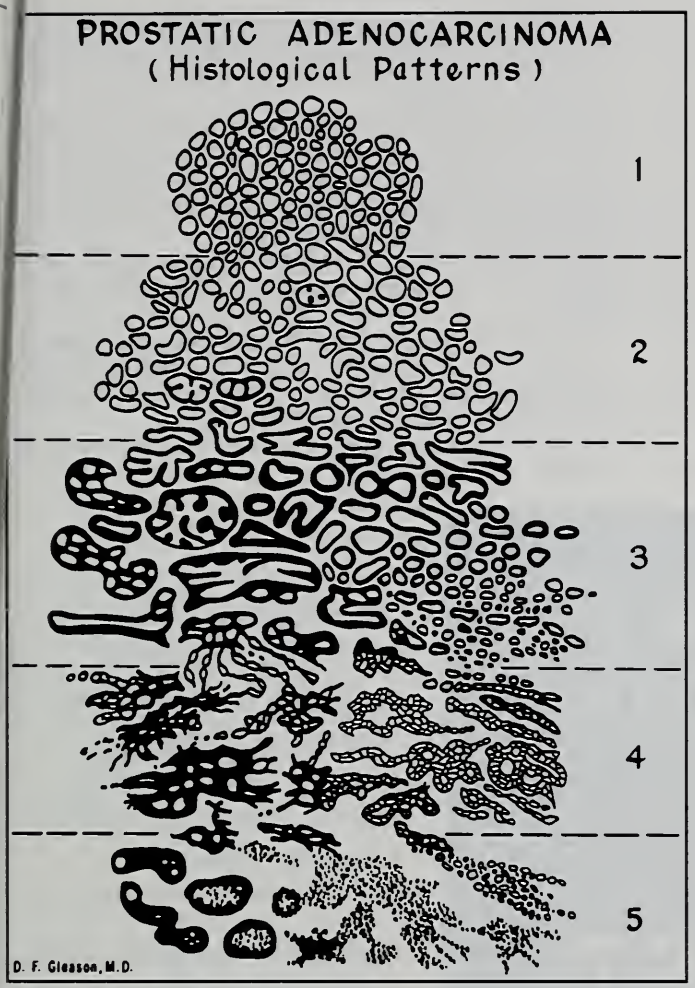


Fig. 3—Five pattern Gleason System.

Age and PSA.—The youngest group, ages 58 to 64, had PSA-1 values over 10 in 10%. The older groups had levels over 10 in 23-26% (Table 2). Although the numbers are small, and the difference between the youngest group and the older groups combined were found to be nonsignificant (P=0.31), the data tended to be consistent with the direction of Oesterling's findings, that serum PSA level correlated with age.[10]

Prostatic adenocarcinoma (PA): Age and PSA.—The youngest group, ages 61 to 64, had PSA-1 levels under 10 in 38% of cases. The older groups had PSA-1 levels of 40%, 65%, and 46%, respectively, under 10 (Table 3). Even though the difference between the youngest group and the older groups combined (52%) are not significant (P=0.70) in this small series, it may reflect a greater number of low grade carcinoma among the elderly, or clinically less significant tumors in this group. The PA cases tended to have considerably more PSA-1 levels over 10 (50%) than the NPA cases (21%) (P<.01).

Gleason Scores and PSA.—Of 60 pairs available having both PSA-1 and Gleason scores, there were 38 (63%) with scores of 4 to 6. Twenty-three of these (61%) had PSA-1 levels of less than 10, and 15 (39%) more than 10. There were 22 Gleason scores of 7 to 10. Six of these (27%) had PSA-1 values of less than 10 and 16 (73%) more than 10. In this series, Gleason scores were significantly associated with PSA-1 values, with a correlation coefficient r=0.50 (P=.016).

Conclusions

This study of 160 consecutive biopsies of prostatic carcinoma correlated prebiopsy PSA values (PSA-1) with the presence or absence of adenocarcinoma, based on the material obtained by a "sextant" biopsy gun. The 97 cases in which no carcinoma was found were interpreted as BPH with or without inflammation. Additional PSA serum values were obtained at up to 30 months. In one case where PSA-1 was 15.9, and the PSA-4 was 16.2, carcinoma was found on the fifth biopsy after 18 months. The tumor was moderately well differentiated (Gleason 5), and must have been quite small to have escaped four previous biopsies. There was no increase in PSA in this case, as tends to occur with more rapidly growing carcinomas. The patient was 79 years old and was probably unharmed by the 18-month follow-up period, since small low-grade tumors do not tend to metastasize and he was spared more aggressive therapy.[11,12] In three other cases where the follow-up PSA rose more than seven levels, it is certainly possible that carcinoma will be found after continued monitoring. These are cases 7, 15, and 17 in Table 1. Some pathologists do not like to assign a Gleason (or other) grade to needle biopsies, because of the small size of the material. Bostwick has correlated Gleason grade with needle biopsies in 316 matched prostatectomies, and recommends that the Gleason grade be employed in all needle biopsies.[13] There was increased correlation of PSA-1 with age between the youngest group and the combined older groups, although statistically not significant. PSA-1 levels over 10 were higher in the carcinoma cases, although again, this was statistically not significant. Although the numbers are small, it is possible that the mild decline in high PSA in the oldest group reflects a higher percentage of well-differentiated tumors, or smaller less clinically significant tumors.

There was a statistically significant correlation of PSA-1 with Gleason scores. It is well known that in cases of prostate cancer the PSA may be less than 4.[14,15] This occurred in 17% of these cases of which 15% were well or moderately well differentiated (Gleason 4 to 6) and only 2% poorly differentiated (Gleason 8). This corresponds with the findings of Chauvet et al, who stated that in 179 patients, median age 69, there was a PSA-1 of less than 4 in 17%.[16] Treated by irradiation the four-year relapse-free survival was 90%. In the present series, PSA-1 values of 0.6 and 1.3 were found in two cases with moderately differentiated tumors. Cohen has found moderately differentiated adenocarcinomas in six cases of advanced pros-

tatic carcinoma, in which direct tissue staining with monoclonal antibody did not show PSA.[17]

The highest value of PSA-1, taken seven months after biopsy, and in which there is no evidence of tumor a year later, is 54.6. This is consistent with two published series, a high of 55 in BPH reported by Sershon in 187 transurethral resections at the Mayo Clinic,[9] and 47.1 reported by Guthman et al in a series of 100 men with increased PSA and benign digital examination.[17] These two studies, plus this current study comprise 387 patients. The answer at the present time to the question *"Is there a minimum serum PSA value diagnostic of carcinoma of the prostrate?"* is that it must be higher than 55 ng/mL. Granick has reported that PSA greater than 80 ng/mL, generally correlates with advance disease.[18] The minimal level of PSA diagnostic of prostatic carcinoma probably lies between 55 and 80.

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Important Advances in Clinical Medicine

General Surgery

Theodore R. Schrock, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in general surgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on General Surgery of the California Medical Association, and the summaries were prepared under the direction of Theodore R. Schrock, M.D., and the panel.

Pregnancy-associated Breast Cancer

THE term pregnancy-association breast cancer refers to a breast cancer that has grown with exposure to the hormonal milieu of pregnancy. A breast cancer diagnosed in a pregnant woman is a pregnancy-associated breast cancer, a situation reported in as many as 1 in 3,000 pregnancies. Pregnancy-associated breast cancer also includes breast cancers diagnosed in the postpartum period because the preclinical growth phase for breast cancers lasts many months or even years. A breast cancer diagnosed within a year after the completion of pregnancy almost certainly existed in the breast while the woman was pregnant and hence may also be considered to be a pregnancy-associated breast cancer.

Pregnancy-associated breast cancer has been recognized with increasing frequency in recent decades. It occurs in between 10% and 25% of breast cancer patients younger than 35 years. This increase in the incidence of pregnancy-associated breast cancer may be related to more women delaying childbirth into their 30s and 40s when breast cancer more commonly occurs.

Breast cancer associated with pregnancy has been reported to portend an extremely poor outcome. Early studies suggested that the prognosis of this cancer is dismal, with five-year survival rates being less than 20%. Recent studies, however, have found no difference in survival, stage for stage, between pregnancy-associated and nonpregnancy-associated breast cancer.

A consensus does not exist as to whether pregnancy-associated breast cancer represents a biologically more aggressive malignant process than does that not associated with pregnancy, primarily because it is a challenging disease to study. The problem in analyzing survival following this cancer is in the identification of appropriate control groups. Because pregnancy-associated breast cancer is uncommon, most studies have first found a group of patients with this form of breast cancer and then attempted to identify a matched control group for statistical comparison. This process introduces a possible selection bias that is decreased if the two groups are identified concomitantly by the same selection criteria.

A recent study showed that women 30 years of age or younger with pregnancy-associated breast cancer had decreased rates of overall survival and disease-free survival compared with similar women whose breast cancer was not associated with pregnancy. This difference in survival appeared to be a stage-related phenomenon because women with pregnancy-associated breast cancer were more likely to have larger and more advanced cancers at the time of a definitive operation.

The design of the study limits generalizations regarding comparative tumor behavior in pregnancy-associated and nonpregnancy-associated breast cancer, but it appears that

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early-stage breast cancer has a similar prognosis whether or not it is associated with pregnancy. By contrast, advanced pregnancy-associated breast cancer appears to have a worsened prognosis than does nonpregnancy-associated breast cancer. The difference may relate in part to the extent of nodal spread, which in these patients tended to be greater than with nonpregnancy-associated cancer.

Unlike tumor pathogenesis and nodal metastases, tumor size is a variable that is subject to clinical detection. Clinical detection can be impaired by physiologic engorgement of the breasts during pregnancy and lactation. Breast ultrasonography can be useful in this regard because it can distinguish and characterize masses within a gravid or lactating breast and can be used to guide core-needle biopsy for cytologic or histologic diagnosis.

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Laparoscopic Operation for Treatment of Gastroesophageal Reflux

HEARTBURN and other symptoms of reflux affect more than 20 million adult Americans. Medical therapy is relatively effective in the acute phase of the disease, but fails to alter its natural history, particularly the tendency to relapse. Recurrent or persistent reflux can seriously damage the esophagus, causing strictures, the development of Barrett's ulcer, and other complications. Thus, the surgical correction of reflux is indicated in patients whose symptoms fail to resolve while they are receiving medical therapy or in those in whom symptoms recur. An operation permanently restores the competency of the cardia in about 90% of patients; nevertheless, gastroenterologists and occasionally patients themselves were heretofore reluctant to proceed with it, mainly because of the pain, discomfort, and risks associated with the operation and its recovery.

Laparoscopic techniques now offer a new alternative. Laparoscopic Nissen fundoplication can be done with relative safety and with good immediate results. When performed by surgeons with experience in the management of esophageal disease and in laparoscopy, this approach yields results that are comparable to those done by the open approach. Indeed, most studies comparing the outcome of patients operated on by the open and laparoscopic approaches show a lower need for analgesics and fewer complications in the patients when done with minimally invasive techniques.

As experience is accumulating, several elements are becoming clear. First, the procedure demands a level of competency in laparoscopy that far exceeds that needed to do a cholecystectomy. Thus, adequate training is paramount, and appropriate supervision and assistance by a qualified surgeon are imperative during the learning period. Second, there is a tendency on the part of patients, as well as some members of the medical profession, to regard the laparoscopic antireflux operation as a relatively minor procedure. Surgeons must carefully guard against this erroneous assumption: the indication for antireflux surgical intervention remains the same. Third, obesity makes the operation particularly difficult, and the increased intraab dominal pressure caused by it may contribute to the development of a postoperative hiatal hernia. Thus, every effort should be made to ensure that an obese patient loses weight before the operation. Last, to perform a good operation, the surgeon must have substantial information about the pathophysiology of the disease and the degree to which the patient is affected. It is not simply a matter of "diagnosis," but one of characterizing and identifying associated problems. Thus, all patients should have a complete workup before the operation. That means, for the average patient, esophageal function testing with manometry and 24-hour pH monitoring and endoscopy with biopsy. Upper gastrointestinal series are helpful because they provide valuable information about the relations of the lower esophagus to adjacent structures.

Reoperations in this area are difficult and the results far inferior to those obtained the first time around. To avoid them, the surgeon must know the extent to which the disease affects the patient, tailor the operation to the patient's needs, and perform the procedure flawlessly.

Based on an experience gathered over the past five years, we think that this approach offers a new and superior alternative to patients with reflux refractory to medical therapy. In essence, it provides the same time-proven, effective operation to restore the competency of the cardia, with less discomfort and faster return to a normal life.

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Laparoscopic Sonography and Staging of Liver Cancer

ULTRASONOGRAPHY done at open operation aids the surgeon in detecting and sampling unsuspected liver metastases and guides hepatic resection or ablative treatment such as cryotherapy. Laparoscopic ultrasonography is readily performed and adds materially to the conduct of laparoscopic staging operations aimed at preventing futile laparotomy.

Laparoscopic ultrasound devices usually consist of linear-array transducers operating at frequencies of 6 to 10 MHz mounted on rigid or flexible 10- to 12-mm diameter probes. Flexible probes with transducers operating in the range of 6 to 7.5 MHz are best suited for visualizing the liver. Rigid probes are best suited for doing ultrasound-directed biopsy during which the biopsy needle must be parallel with the longitudinal axis of the transducer. Newer probes that allow the passage of a core or aspirating needle by a needle guide aligned parallel with the beam of the ultrasound waves may minimize the double-fulcrum effect encountered with laparoscopic freehand biopsy.

Patients with primary liver cancer have been shown to benefit from laparoscopic staging. Most will be found incurable by traditional resection because of multifocal disease, peritoneal carcinomatosis, or severe cirrhosis. Most hepatic tumors in western practice are secondary, and many derive from colon or rectal primary tumors. Complete resection or destruction by other means may result in prolonged survival rates in 25% to 35% of a selected group of such patients. Most hepatic resections and cryoablations require laparotomy. The laparoscopic determination of incurability rather than determination at laparotomy results in less morbidity, cost, and time in the hospital.

The technique of the laparoscopic assessment of the liver consists of placing an umbilical and a right-sided cannula. Examination begins with the telescope in the umbilical port and then the right-sided port. If no visual sign of incurability is found, the ultrasound probe is passed through the right-sided port. Laparoscopic ultrasonography consists of obtaining systematic views from both the anterior and posterior surfaces. The instruments may be switched between ports, or an additional left-sided port may be placed for detailed examination of the left lateral segment. If adhesions from previous operations preclude easy access to the lateral segment, most of this structure can be viewed ultrasonographically by placing the transducer against the falciform ligament and rotating the transducer to view obliquely through the lateral segment.

Ultrasonography of the liver done at laparotomy may detect an additional 10% to 40% of tumor deposits not visualized by conventional preoperative imaging methods or not palpable by a surgeon. The addition of hepatic computed tomographic arterial portography improves the accurate determination of the extent of hepatic tumor preoperatively; however, this method may overestimate the extent of extrahepatic or hepatic tumor in more than 10% of cases. Laparoscopic ultrasonography in one study defined hepatic tumors that were not visible by laparoscopy in a third of patients. With the use of laparoscopic ultrasonography only, 16% of patients were found to have disease that was not curable by conventional hepatic resection. Our experience suggests that the addition of laparoscopic ultrasonography to laparoscopy for the staging of primary and secondary hepatic tumors defines an additional 15% to 20% of patients to be incurable by treatment with either hepatic resection, cryoablation, or a combination of both. Patients found incurable by laparoscopic methods are generally returned home the same day.

Should the laparoscopic staging operation be done synchronously with laparotomy or as a separate procedure? The former approach is desirable in centers with competence in hepatic surgical procedures that are prepared to proceed with definitive treatment in the same setting. The latter is appropriate for surgeons who may refer cases on after determining possible curability.

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Biomarkers for Breast Cancer

BIOMARKERS are most helpful in the management of breast cancer in its earliest stages—that is, node-negative breast cancer—when we must identify patients

who are at the lowest or highest risk for recurrent or metastatic disease with early mortality. Apart from lymph node status (N), tumor size (T), and grade (G), the only breast cancer markers having proven clinical usefulness are estrogen receptor (ER), progesterone receptor (PR), and S-phase fraction (SPF). With these six well-established prognostic variables, clinicians still treat virtually all patients with stage I or stage II breast cancer with parenteral adjuvant therapy. This treatment for all is necessary to reduce the chance of metastases in those few patients—20% to 50%—who are truly at risk. Thus, there remains considerable incentive to discover new prognostic markers that will identify the few persons at risk, thereby sparing the majority who do not need parenteral adjuvant therapy. As well, biomarkers would be helpful in identifying patients less likely to respond to conventional chemotherapy or hormonal therapy.

Despite great interest and intense searching, there is no ideal prognostic indicator under development or on the horizon. Nor is there a suitable combination of markers that, for any given patient, can predict the natural course of the disease. Increasing optimism that a measure of breast tumor angiogenesis (microvessel density as detected by factor VIII staining) can at least discriminate between high- and low-risk, node-negative patients has now been muted by a recent large clinical study demonstrating the assay's unacceptable variability and failure to predict patients' outcome.

Critical among the established guidelines for the clinical development of any new prognostic marker is that the marker have biologic relevance to the disease process. In this regard, all measures of tumor angiogenesis remain on sound footing. Just as the best use of the estrogen receptor is to select patients for antiestrogen therapy, the ultimate clinical usefulness of a biomarker for microvessel density might be its ability to select candidates for antiangiogenesis therapy. Such is the emerging promise of other previously touted breast cancer prognostics, including the oncogenes c-*erb* B-2 (HER-2/*neu*) and p53. Gene therapies designed to correct mutations in the p53 tumor-suppressor gene have now entered clinical trials. Likewise, various therapeutic approaches are being developed to target the 25% of breast cancers that over-express the c-*erb* B-2 oncogene; one approach, in particular, uses a tumor-inhibiting anti-HER-2 monoclonal antibody that in phase II studies produced complete and partial clinical responses without substantial toxicity in patients refractory to conventional breast cancer chemotherapy. These examples should help reinforce our interest in and continued search for new biomarkers that will serve as targets for the development of novel therapeutic agents, even if they fail to live up to our expectations as breast cancer prognostic factors.

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Liver Transplantation—Treatment Option for Selected Liver Tumors

SURGICAL resection for primary liver cancer, mainly hepatocellular carcinoma, remains the only treatment proved capable of cure. Many patients cannot undergo partial resection, however, because of decreased liver function due to either cirrhosis or a centrally located tumor. For these patients, total hepatic resection followed by liver transplantation offers an alternative. It was this type of patient that became the first long-term survivor after liver transplantation: a 19-month-old girl with an unresectable hepatoma. She had a transplantation in 1967 and, unfortunately, died of recurrent hepatoma 14 months after the operation. In 1983 the National Institutes of Health Consensus Conference on liver transplantation stated that liver transplantation was no longer an experimental therapy, thereby proliferating the number of liver transplant centers in the United States. Primary hepatic carcinoma not amenable to resection was one of the indications for transplantation. Total hepatic resection and liver transplantation allowed a wider resection margin and would hopefully result in an improved cure rate. Unfortunately, like the little girl in 1967, many patients who survived the liver transplantation later died of recurrent cancer. Thus, many liver transplant centers consider a primary hepatic malignancy a contraindication to liver transplantation, even if the tumor is totally confined to the liver.

Some centers have continued to perform liver transplantation in these patients, however. The survival rate after liver transplantation in patients with liver cancer had been approximately 25% at three years, yet more recent reports in similar patient populations have described three-year survival rates of 46% to 66%. The reasons for the improved results are not clear, but they are probably due to at least three factors: improved surgical technique, more refined patient selection criteria, and the availability of combined modality therapy.

Advances and refinements in the surgical technique of liver transplantation and postoperative management have

led to an overall improvement in patient survival. The expected one-year survival rate in liver transplant patients with benign diseases was 60% to 70% and is now 80% to 90%.

We have refined our patient selection criteria. Any patient with an extrahepatic tumor, including lymph node metastases, has an extremely poor prognosis and should not undergo either partial resection or total resection with liver transplantation. No other factors have been shown to reliably predict failure, but other preoperative characteristics that have demonstrated increased relative risk of tumor recurrence—in some but not all clinical series—are tumor size greater than 5 cm, bilobar involvement, and macroscopic vascular invasion. It is difficult to decide which risk factors should be "relative" and which "absolute" contraindications to total resection with liver transplantation. Our center excludes patients with portal vein invasion, but does consider patients with tumors larger than 5 cm or bilobar involvement.

Finally, centers are now treating patients with combined modality therapy. All the recent reports describing clinical series of patients undergoing liver transplantation for primary liver cancer use either adjuvant or neoadjuvant therapy in their treatment plan. The implementation of chemotherapy has been the only notable therapeutic change when compared with historical controls. At this time, no randomized, prospective, controlled trials have been done to determine the effectiveness of radiation therapy or adjuvant or neoadjuvant chemotherapy in these patients. Our center currently uses neoadjuvant fluorouracil and chemoembolization with doxorubicin hydrochloride, as well as postoperative adjuvant chemotherapy with doxorubicin and fluorouracil for four months.

The possible liver transplant recipients far outnumber the possible donors. This mismatch between supply and demand creates difficulty in allocating organs. The use of donor livers in patients with liver tumors will shift organs away from patients with benign liver diseases, who have a better predicted long-term survival. Therefore, even though there is some evidence that liver transplantation is superior to partial resection in certain patients with small tumors and cirrhosis, most centers recommend partial resection (if feasible) in these patients, to conserve the availability of donor livers.

Patients with chronic hepatitis should be screened for the presence of liver cancer. Early referral before the cancer spreads outside the liver will increase the number of patients who can be effectively treated. Because the organ supply is limited, patients with cirrhosis who can tolerate a partial resection should have it. In cases where the tumor cannot be removed with a partial liver resection, total liver resection with liver transplantation is the only proven curative alternative. While a patient is waiting for a donor liver, which may be six months or longer, our center uses chemoembolization and neoadjuvant chemotherapy to control disease. Multicenter trials are under way to evaluate the effectiveness of adjuvant chemotherapy in these patients. These trials should provide necessary information as to the best combination of surgical therapy and chemotherapy in the management of liver tumor cases.

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Skin-Sparing Mastectomy With Immediate Tissue Reconstruction

BREAST cancer is frequently treated with breast-conserving techniques, including lumpectomy, axillary dissection, and radiation therapy. Mastectomy with lymph node dissection remains the treatment of choice in many patients, however. To facilitate patient acceptance of this recommendation, skin-sparing mastectomy and immediate transverse rectus abdominis myocutaneous (TRAM) flap reconstruction were developed in 1991. This procedure satisfies oncologic requirements and provides superior reconstructive results compared with conventional techniques.

The proper surgical treatment of breast cancer requires the removal of the nipple-areolar complex and previous biopsy scars in the process of mastectomy. Previously an elliptical incision was designed to satisfy these criteria. This provided for a straight-line closure when no reconstruction was done but produced a distinctly patchwork appearance when immediate tissue reconstruction was performed. Because patients increasingly seek immediate reconstruction and express a greater preference for reconstruction with their own tissue, newer methods were sought that would improve the results while maintaining strict oncologic standards.

Of note, several reviews have determined that immediate myocutaneous flap breast reconstruction results in no significant differences in patient survival and in the detection of recurrences when compared with mastectomy alone. Patients may also undergo radiation therapy if necessary after this type of reconstruction.

Technically, skin-sparing mastectomy involves the same-thickness skin flaps as in a conventional modified

radical mastectomy but is performed through a limited incision that is dictated by the position of previous biopsy scars. The natural inframammary crease is preserved. Axillary dissection may be done through a separate transaxillary incision. The result is a completed mastectomy with all breast tissue removed and an empty breast skin envelope. The removed skin is then replaced with abdominal skin. The remaining skin is removed from the TRAM flap, which is placed in the breast envelope as a living implant. The flap therefore settles into the breast's natural contour, resulting in a superior aesthetic shape that closely resembles the natural breast.

From 1993 to the present, we have performed skin-sparing mastectomies with TRAM flap reconstruction on 31 patients at the University of Washington Medical Center (Seattle). We select patients for immediate reconstruction who are unlikely to require irradiation and who are anticipated to have fewer than three positive lymph nodes. Of the 31 patients, five underwent bilateral skin-sparing procedures. Of the total of 36 TRAM flaps thus performed, 12 were transferred microsurgically as free TRAM flaps and 24 by standard pedicled techniques. All flaps healed without serious complications, and no patients sustained delays in further treatment because of problems related to their reconstructions.

Skin-sparing mastectomy with immediate autogenous reconstruction provides superior results to traditional techniques and improved patient satisfaction while maintaining all appropriate oncologic principles for surgical resection. This provides an excellent treatment of patients when breast-conserving techniques are not applicable. This technique is not appropriate when the immediate reconstruction is performed with implants and should not be applied when the mastectomy is done for recurrence in an irradiated breast following unsuccessful breast-conserving therapy.

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Thromboembolism Prophylaxis in Surgical Patients

VENOUS thromboembolism continues to be a major cause of morbidity and mortality in surgical patients and those who have survived severe injury. Deep venous thrombosis (DVT) occurs in 19% to 25% of patients being treated surgically and in more than 50% of trauma patients. Currently symptomatic pulmonary embolism develops in 1% to 2% of trauma patients and, of these, 25% to 50% die. Those at highest risk of thromboembolism are patients undergoing major thoracic or abdominal operations; those suffering fractures of the spine, pelvis, or lower extremities; or patients older than 30 years. Because of the common occurrence of thromboembolic complications in surgical patients, it is important that surgeons have an effective approach to their prevention.

Available methods of thromboembolism prophylaxis include pharmacologic (heparin), mechanical (sequential compression devices and foot pumps), and surgical (caval filters). Heparin therapy is currently the standard. Both the mechanical and the surgical methods of prophylaxis are used when heparin therapy is contraindicated or has failed.

Several heparin regimens are used widely: low-dose heparin (5,000 units administered subcutaneously twice or three times a day), adjusted-dose heparin (enough to raise the partial thromboplastin time [aPTT] five seconds above normal), and unmonitored low-molecular-weight heparin (30 mg given subcutaneously twice per day).

Both unfractionated (standard) and low-molecular-weight heparin exert their anticoagulant effect through the potentiation of antithrombin III. Therefore, for any heparin regimen to be effective in preventing thrombosis, the patient must have adequate antithrombin III levels. We and others have recently shown that the majority of severely injured patients have antithrombin III levels that are substantially depressed. Therefore, the patients at highest risk for thromboembolism have low antithrombin III levels.

In the past decade, the approach of progressively adjusting the heparin dose to maintain the aPTT above normal (adjusted-dose heparin) has been shown to be superior to the low-dose approach in preventing venous thromboembolism. Adjusting the heparin dose compensates for the depleted antithrombin III levels. An important note is that the increased doses of heparin used with this method have not been shown to result in more or worse bleeding complications.

A new group of heparin products, low-molecular-weight heparins, has recently captured great interest. These are

standard heparins that have been subjected to a fractionation process to yield a purer compound with a higher concentration of the subunit responsible for the potentiation of antithrombin III. The important differences between standard and low-molecular-weight heparins are that low-molecular-weight heparins have a longer half-life, a more dependable absorption, a more potent effect on antithrombin III, and may be less likely to incite heparin-induced thrombocytopenia. Despite these possible advantages, a considerable disadvantage of the low-molecular-weight heparins is that most laboratories are unable to monitor their anticoagulant effect. As with standard heparin, low-molecular-weight heparin in the absence of adequate antithrombin III is doomed to fail at preventing thromboembolism.

Several low-molecular-weight heparins are available in Canada, and now there are two in the United States.

These products are protected by patents, and so their manufacturers have an interest in sponsoring research to promote them. But the majority of current low-molecular-weight heparin efficacy trials have compared the use of low-molecular-weight heparin with that of placebo and low-dose heparin rather than with adjusted-dose heparin. The trials that have compared the use of low-molecular-weight heparin with that of adjusted-dose heparin have failed to show that administering low-molecular-weight heparin further reduced the overall incidence of DVT. The low-molecular-weight heparin regimens have DVT rates of 12% to 16% in surgical patients and 30% in severely injured patients. This failure to prevent DVT is most likely the result of an inadequate heparin effect due to antithrombin III depletion. Until monitoring of low-molecular-weight heparin becomes more feasible, this failure will persist.

In summary, for patients undergoing a major operation or who are severely injured, we recommend the following measures. Patients without specific contraindications to heparin should be given enough heparin to maintain their aPTT five seconds above normal (adjusted dose). Those patients who have a contraindication to heparin and are at a low to moderate risk for thromboembolism should have a mechanical method of prophylaxis used. Those patients with contraindications to heparin who are at high risk should have a caval filter placed.

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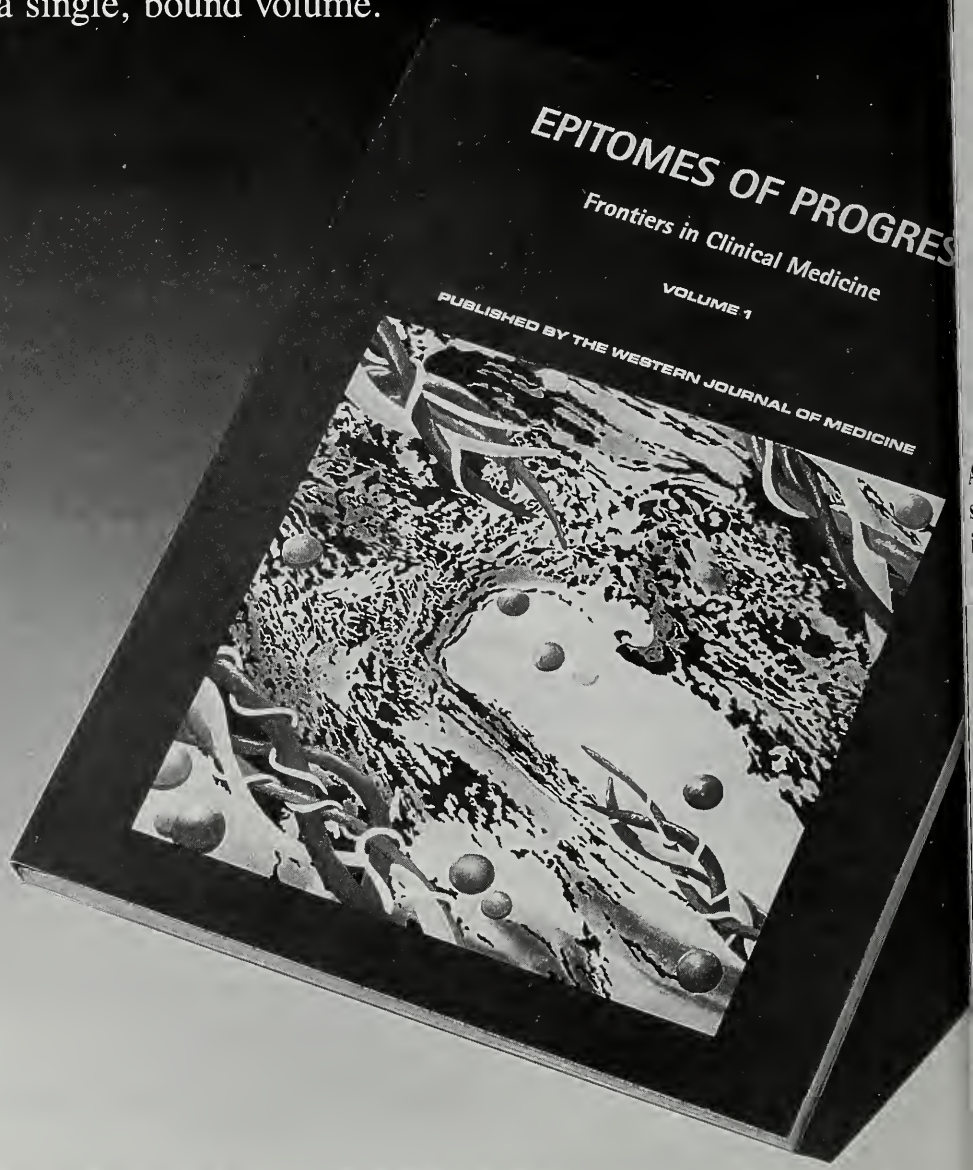
epitome

i-'pit-ə-mē\ *n* [L, fr. Gk *epitomē*, fr. *epitemnein* to cut short fr. *epi-* + *temnein* to cut — more at TOME] (1520) **1 a** : a summary of a written work **b** : a brief presentation or statement of something **2** : a typical or ideal example: EMBODIMENT (the British monarchy itself is the ~ of tradition — Richard Joseph) **3** : Plural — *Epit-o-mes* — A regular FEATURE of *The Western Journal of Medicine*, now available in a single, bound volume.



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The Internet: A New Instrument in a Virtual "Doctor's Bag"

JANIS GLOVER, M.L.S. AND HOLLY K. GROSSETTA NARDINI, M.S.

ABSTRACT—The Internet is a valuable professional tool, and savvy physicians should understand its strengths and weaknesses. This worldwide network of networks allows doctors to communicate using any of several common Internet tools—electronic mail, mailing lists, newsgroups, telnet, file transfer protocol, gopher, and the World Wide Web. Many sites on the World Wide Web are expressly designed for physicians, although users must be careful to evaluate information for accuracy and currency. In Connecticut, physicians can use CHIME-Net, which provides access to the Internet and easy exchange of financial and patient data. Physicians ready to plunge into the Internet should consult their hospital library or information services department for more information.

Introduction

OVER the past few years, the Internet's benefits to health-care delivery have been trumpeted from the rooftops.[1] Most medical professionals have read news articles touting how the Internet will change their day-to-day work life. But what does it really mean for Connecticut physicians?

The average physician may have an America Online account that she uses to check her stock portfolio, buy a new music CD, or assess ski conditions at the slopes. But the Internet is not just a high-tech diversion for late-night computer junkies. It is also a powerful professional tool.

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Since the arrival of the easy-to-use World Wide Web, novices can quickly tap into the Internet without investing long hours learning the technical details of Internet protocols. At the same time, competition has driven down the cost of access to the Internet. Because the sciences have long relied heavily on computers, a bevy of technical, scientific, and biomedical resources is already available on the Internet.

The Internet was founded by the government as a research and communications tool in the early 1970s.[2] Designed to withstand a nuclear war, the Internet is entirely decentralized with "hubs" dispersed throughout the nation. Because no single organization is in charge of the Internet, it has grown freely. This growth was initially spurred by the Internet's popularity with the academic community. The Internet's user base has now spread far beyond the original core group of technical users, and the number of people online has expanded exponentially as the Internet has become easy to understand and use. In fact, it is estimated that 15.7 million Americans will have Internet access by the end of 1996.[3] This massive audience and the freewheeling nature of the Internet have attracted the commercial sector, which sees dollar signs in the networks. Very few companies, however, are currently making a profit on the Internet.

This article will provide an overview of the Internet, show realistic uses for the Internet now, highlight a current medical project involving the Internet in Connecticut, and try to divine the future of the technology for the physician.

What Is the Internet?[4]

The Internet is a "network of networks," connecting personal computers on office desks to hulking supercomputers in university laboratories. Spanning the

globe, this network links government agencies, schools, businesses, individuals, and nonprofit organizations to each other using a uniform set of electronic communication rules or "protocols." Among the most common Internet tools that make use of these protocols are: electronic mail, mailing lists, newsgroups, telnet, file transfer protocol, gopher, and the World Wide Web.

Electronic mail, or email, allows users to send messages directly to others around the world day or night. Each email user has a unique email address composed of his or her "username" (assigned by the local system administrator) followed by the @ sign and a "domain" name—the name of the computer that distributes his or her mail. Addresses look like this: holly@biomed.med.yale.edu and janis.glover@yale.edu. Users must periodically check their mailboxes for incoming messages, much like voice mail.

One excellent way to consult with others is to use *mailing lists* that spring up around specific topics, such as pediatric cardiology or parenting. After subscribing to a list, individuals receive topical email messages posted by other subscribers. Users can participate in the discussion by sending their own messages to the list. In the case of a very active list, 50 or more messages may arrive daily. While mailing lists provide an exceptionally good forum for people to share their thoughts on subjects of common interest, users who subscribe indiscriminately to a number of lists may quickly find themselves inundated with more mail than they have time to read.

Newsgroups operate on the same principle as mailing lists—they are group discussions on specific topics—but the messages are not delivered to email accounts. Individuals use software, called news readers, to connect to newsgroups at their convenience, reading as many postings as they please and adding to the discussion by posting new messages or replying to those already there. There are over 5,000 available newsgroups that are broadly clustered around themes such as science and computers. The names of all groups in a cluster begin with the same prefix such as "sci." and "comp." During the week of 13 May, for example, there were 39 messages posted to sci.med.pathology on 26 topics.

Telnet is a protocol that allows a user to log on to another computer that is miles away. For example, physicians can tap into computerized catalogs at Connecticut libraries and locate the closest one that subscribes to a particular journal or owns a certain book. Visiting physicians or researchers often use telnet to connect to computers back at their own institutions to check for new email or to search institutional databases.

File transfer protocol or, as it is more commonly known, FTP, allows users to copy files to and from remote computers. Documents, images, and programs can be readily downloaded from publicly accessible computers by anyone else with access to the Internet, a process known as "anonymous FTP." Similarly, private documents can be obtained through FTP from password-protected computers, which can be personal computers, workstations, or mainframes. Collaborating with colleagues on research projects, whether in the same hospital or around the world, can be simplified by using FTP to make drafts of papers readily available for revision. Perhaps the most common use for FTP, however, is simply to obtain software or data from public repositories on the Internet.

Gopher, created at the University of Minnesota in 1991 and named for the school mascot, acts just like its namesake. By moving through a series of linked menus, a user burrows deeper and deeper, often connecting to gopher menus at other locations, until ultimately choosing a resource such as a database or a document. That resource could be located on a computer at the local university or in Australia. The idea behind gopher was to superimpose a user-friendly structure on the otherwise chaotic, decentralized resources of the Internet. Gopher technology, though, is now all but obsolete with the arrival of the World Wide Web.

The *World Wide Web*, the most recent mainstream Internet technology, builds on the innovative concepts introduced by gophers. Web browsers, such as Netscape Navigator, Mosaic, Microsoft's Internet Explorer, and Lynx,[5] are software applications that let the user explore the multimedia side of the Internet. These browsers provide a simple interface for accessing Web "pages"—individual sites—that contain text, sound, images, programs and other media. To access a particular Web site, a user can simply type in its unique electronic address (known as a URL, or uniform resource locator) into Web browser software. Or, more commonly, one can simply select a highlighted "hypertext" link on one Web page to connect instantly to another Web page or screen. As with gopher, users may find themselves traveling through Web sites across the globe until reaching the desired information. Many Web browsers also consolidate all the other Internet protocols in one source: users can send and receive email, telnet, FTP, gopher, and read newsgroups all with easy point-and-click software.

What Can It Do for Me?

Ravi Jain, a radiologist at Middlesex Hospital, is an enthusiastic promoter of the Internet. He uses many Web sites, especially those at university medical centers that focus on radiologic images. Often the teaching files and case studies posted on these well-established sites can supplement locally available textbooks and journals.

In one memorable case, Dr. Jain used the Internet to help with a diagnosis. A patient with breast cancer who was taking tamoxifen was given a pelvic ultrasound. Dr.

Jain was aware that the appearance of her uterine lining could be unusual, but was unable to verify what he saw in a textbook. By logging onto a Web site in British Columbia, he found that another radiologist had posted a very similar case. Within minutes Dr. Jain was able to feel confident about his diagnosis. "A good Web site can serve as a second opinion," says Dr. Jain. "Expert opinion and a wealth of real cases are available quickly. The Internet is a great resource for learning and for quickly getting a sense of a subject. You don't have to sit down with a bulky textbook."

Many physicians, like Dr. Jain, armed with personal computers, and modems, already use the Internet either through institutional affiliations (hospitals, universities or HMOs) or commercial vendors (such as I-SNET and AT&T, which offer full Internet access, or America Online, Prodigy, and CompuServe, which provide limited Internet access along with proprietary services available only to their subscribers). These physicians can find the most up-to-date clinical guidelines, scan recent AIDS research, browse releases from the Agency for Health Care Policy and Research, query colleagues around the world, search federal regulations, consult the FDA bulletin board for recent drug approvals, and read online journals and newsletters—some of which are published exclusively in electronic format. Some of these services are free, while others require registration or a paid subscription.

For example, MEDLINE (subscription required) and AIDSLINE (registration required)—long available from the National Library of Medicine (NLM) through direct dial-up connections, then through telnet connections—can now be reached through the Web. Physicians with NLM passwords can use the newly released "Internet Grateful Med" Web site, the latest in NLM's familiar suite of tools for retrieving biomedical information. The advantage of the new access method is that individuals can use their familiar Web browser rather than customized, proprietary (and often expensive) software. (Indeed, information providers may also find it cheaper to provide information through password-protected Web sites, because that frees them from the need to develop costly software of their own—software that would otherwise have to be developed separately for both Windows and Macintosh systems.)

Many professional associations, such as the American Medical Association and the American Academy of Pediatrics, maintain a public presence on the Web. They may have information about their continuing medical education programs, policy statements, proprietary journals, upcoming national conferences, lists of publications, editorial policy and instructions for authors, lobbyist reports, clinical guidelines, local chapter information, membership directories, and other information pertinent to the group's business. Most of this information is updated more frequently than printed information, is less expensive for the organization to maintain, and is available worldwide at the press of a button.

Universities are other fruitful providers of information. A case in point is GASNet, a Web site hosted by Yale anesthesiology professor Keith J. Ruskin. The Web site is dedicated to anesthesiology and contains synopses of journal articles, a collaborative anesthesiology textbook, bibliographies, book reviews, software, and an experimental continuing education section. In addition, the Web site contains a discussion forum for anesthesiology and provides a quick place to check with other professionals about such topics as a new technique or drug.

The U.S. Government is a prolific provider of information and many of its publications are available for free through the Internet. Government sites are ubiquitous and are a reliable source of data, statistics, and research.

For a general collection of statistics on social, economic, and international subjects, the Statistical Abstract Home Page (the Web version of *Statistical Abstract of the United States: 1995*) is the perfect resource. This site covers state rankings, state and county profiles, monthly economic indicators, United States statistics in brief, as well as 25 to 30 of the most requested tables. More detailed census information can be found on the Census Bureau Home Page. The National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention (CDC) provides a variety of resources, including its News Releases and Fact Sheets as well as lists of its publications. It is also possible to retrieve many electronic products via FTP from NCHS, such as the *International Classification of Diseases* (ICD-9-CM).

The well-known *MMWR* (Morbidity and Mortality Weekly Report), another CDC publication, is available on the CDC Web site on the day of publication. Each issue is full-text, complete with charts and graphs, fully searchable, and looks remarkably like the print version. *MMWR*'s electronic version shows the Web at its best: critical information is disseminated freely, broadly, and immediately.

Physicians and their staffs can also find consumer health information, statistics, and free research databases. For example, PDQ ("Physicians' Data Query"), part of the National Cancer Institute's CancerNet, provides comprehensive cancer information designed for both physicians and their patients. Supportive care statements, screening/prevention summaries, drug information statements, and clinical trial information are written in lay language in both English and Spanish. More technical information, such as CancerLit Citations and Abstracts, are intended for professional health-care providers.

Local information is also readily available through the World Wide Web. Many hospitals are bringing up Web sites, replete with public and internal information. Michael Schott, the librarian at Danbury Hospital, created the hospital's Web site with minimal experience and no Internet connection. Working with the Information Systems Department at the hospital and the local public library, he began playing with the code required for publishing on the Web, called HyperText Markup Language (HTML), and he found that he enjoyed it. By hacking around, he began to create the hospital's Internet presence. "It was one of the most frustrating and painful, yet fulfilling, projects I've worked on," says Schott. "I learned more about the hospital than I'd ever known. The head of internal medicine met with me to discuss how to attract residents through the Web. Personnel wants to use it as a recruiting tool. Subpages, like the cardiology department's, are being brought up. It's very exciting."

Bristol, Middlesex, Stamford, and Yale-New Haven Hospitals also have Web sites. These sites are excellent resources for local community information. They contain directions, phone numbers, directories, floorplans, hours, and seasonal information, such as flu shot reminders. In addition, these sites offer community health information, like support group meeting schedules, speaker's bureaus, community events calendars, and links to other Internet resources of interest. As publicity vehicles, the hospital Web sites highlight clinical specialties and services, like vans and clinics, and volunteer opportunities. Functioning as "intranets"—or private, internal Webs—some sites offer continuing education calendars, information about medical photography, directions for admitting patients, committee lists, internal forms, and policies and procedures.

Local university medical centers also offer unique resources. "Biomedicine and Health in the News," a gopher database produced by the Lyman Maynard Stowe Library at the University of Connecticut Health Center, provides synopses of the latest *New York Times* biomedical stories and identifies the original research by listing the complete citations to the scientific literature. If a doctor heard a colleague mention a current news story about a study correlating earthquakes with the incidence of heart attacks, where could she turn to find the citation to the original research? An expensive database like NEXIS might turn up the news story, but the popular press rarely cites the original study. MEDLINE is certainly more comprehensive, but not up-to-the-minute. In this case, "Biomedicine and Health in the News" reveals that the story appeared in the *New York Times* on 15 February 1996, based on articles published in the *New England Journal of Medicine*, 1996, volume 334, issue 7.

The Cushing/Whitney Medical Library at Yale University has initiated a project to make sense of the chaos of the Internet by selecting Web resources according to defined criteria. The medical library staff is building links to Internet resources in all the disciplines in the health sciences (for example, bioethics, dermatology, cell biology, and nephrology), as well as general interest sections, such as grants and funding, education, news, reference, and journals and newsletters. The goal is to create a selective list of authoritative and useful resources that relate to research, teaching, and clinical activities at Yale. The project is highly collaborative—liaison relationships between librarians and faculty, researchers and clinicians have been established to help refine selection and organization.

Caveats

With very little effort, anyone can mount a page on the World Wide Web. Because it is relatively easy to learn HyperText Markup Language (HTML) and because it is so inexpensive to create these pages, too much unreliable information is floating around on the Internet. In fact, a casual browser of the Internet might just as easily stumble across cancer information provided by the National Cancer Institute as by a high school student with a Prodigy account who happens to have mounted his own page on the Web for fun.

Dr. Peter Buch, a gastroenterologist from Manchester Hospital, cautions, "You have to stay ahead of your patients. Once a relative of a patient came to see me with a five page list of esoteric immunotherapy treatments for pancreatic cancer. Sometimes the information is too widespread for lay people to make sense out of it. There can be too many references and the danger is that someone might go off-track with regard to their therapy."

This glut of information on the Web, combined with the current lack of peer-review standards, warrants a healthy dose of skepticism when encountering information on the Internet. All information gleaned from the Internet—and from anywhere, for that matter—should be questioned. Who is responsible for this information? Who wrote it, produced it, mounted it on the Internet? When was it done? Is it updated regularly? Is there a sponsoring organization? A peer-review process? There are certainly collections of Internet documents that meet the standard criteria for quality information sources, and those sources should be used and accepted. However, common sense and good judgment are important guidelines when online.

The Internet does not and will not replace all traditional print sources of information. Some resources are simply easier to use, browse, and understand in print, and they will remain that way. *Harrison's Principles of Internal Medicine* and *Stedman's Medical Dictionary* are valued print resources even though electronic (but harder-to-use)

versions have appeared. Many times, picking up the phone or flipping through a book is easier than scouring the Internet to find a simple piece of information.

Part of the problem is that searching the Internet is still rudimentary. There is no truly comprehensive index to all its information. The Internet is not like a proprietary database, such as the National Library of Medicine's MEDLINE database, which has a carefully controlled vocabulary, the Medical Subject Headings (MeSH), and thorough indexing. The Internet must develop in two areas to help users find information. First, it needs to adopt standards for information. Common vocabulary and keywords, and uniform formatting, would be a start. Second, software to search the vast amount of Internet information is more important than ever. Powerful indexing tools exist as prototypes but have not yet evolved into reliable, commercially available products. Until a person using the Internet can be reasonably assured of the comprehensiveness and trustworthiness of online information, it will remain a supplemental and not a primary source.

Users should not expect that primary information which costs money in print will be available for free on the Internet. There are some notable exceptions because some publishing houses are experimenting with electronic distribution of journals. Full-text issues of *The Journal of Biological Chemistry* and *British Medical Journal,* for example, are freely accessible to all readers on the Web. For the time being, while paid print subscriptions outnumber online browsers, publishers are willing to maintain both versions. This is unlikely to persist over the long term, however, and some form of subscription will probably become the norm—though possibly at lower cost, as speedy electronic delivery of articles allows publishers to eliminate printing costs.

One factor that is still deterring publishers from diving head first into the electronic world is the ease of copyright infringement on the Internet. Until there are further advances in protecting against unauthorized duplication and distribution of articles, print journals are likely to remain the backbone of the medical literature.

Publishers are not the only ones working out the kinks of using the Internet. Health-care providers are equally concerned about maintaining the privacy of patient records as they are transferred electronically over the Internet. One of the principal goals of CHIME-Net, the network which provides Connecticut hospitals with access to the Internet and to other Connecticut hospitals, has been to show that hospitals can transfer confidential information to other organizations without compromising their security. Electronic billing can become routine. Until security issues are perfected, however, health-care institutions will be reluctant to embrace the Internet with open arms.

How Do I Find Out More About What's Available in My Hospital? Who Holds the Key?

If you are debating how to begin exploring the Internet, visit your hospital library. The odds are that your librarian has been using the Internet, attending classes, reading, and exploring for some time. This is an excellent opportunity to experiment with Internet tools, talk with an experienced user, and find out how to access the Internet yourself. The information services division of your organization may also be a valuable source of information. Not only does this department install your computer and keep your network running, but it might offer training for Internet novices.

Librarians at St. Francis Hospital in Hartford use the Internet daily to supplement their print collection. Just in the past few months they have located listings of all the outpatient clinics in Connecticut through the NYNEX Web site; found information on alternative medicine that would not normally be available in a medical library; printed out detailed census reports that they do not own; located successful teenage pregnancy prevention programs and downloaded information about the Royal College of Physicians in England for a resident. Says Carolyn Wilcox, a librarian at St. Francis, "These are fairly typical uses of the Internet in a library setting. The Internet provides a good back-up for our searching." Seconds Robin Ackley, the librarian at Waterbury Hospital, "There's nothing noteworthy about my business on 'net. I go there when my other possibilities have been exhausted. I turn to the Internet for the known or the completely unknown." Both librarians have plans to begin training sessions for physicians as Internet connections spread throughout the hospitals.

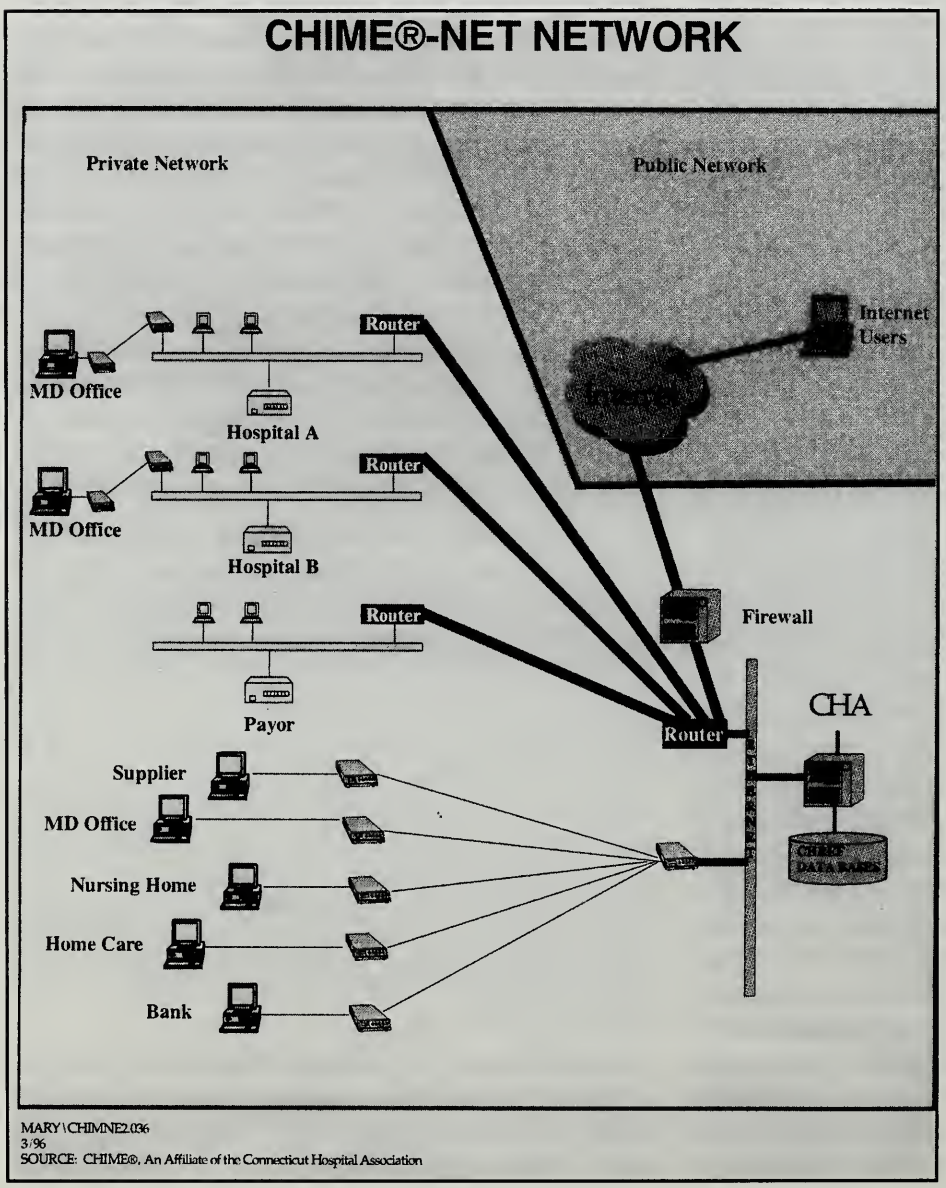
Statewide Internet training is being approached on a broader level as well. Over the past year and a half, the Connecticut Hospital Research and Education Foundation (CHREF), an affiliate of the Connecticut Hospital Association (CHA), has been continuing a project based on a grant obtained from the National Library of Medicine and the National Science Foundation (October 1994 to October 1995) to create CHIME-Net, a network connecting hospitals in Connecticut to each other and to CHA headquarters in Wallingford, Connecticut. CHREF maintains the central connection to the Internet; each hospital is responsible for its own internal network and its connection to CHA. (Fig. 1) This network allows hospitals to exchange data almost instantaneously rather than waiting for the U.S. mail.

The impetus for this multi-institutional network grew out of two efforts already underway at the Connecticut Hospital Association. One of these efforts was to provide limited access to the CHIME (Connecticut Health Infor-

mation Management and Exchange) database, the statewide database containing inpatient, ambulatory surgery, and emergency department data from Connecticut's acute-care hospitals. The second was to provide for the electronic exchange of claims, eligibility, and remittance advice. At the same time, several hospitals were investigating Internet connectivity. When the Information Systems Conference at CHA was approached with a request to provide email among member institutions, it established a working group. This group, the Network Advisory Committee, designed and piloted the first CHIME-Net connections.

CHIME-Net provides many benefits to Connecticut hospitals and their constituencies. The hospital-to-hospital connectivity allows member institutions to transfer patient records, share clinical information, rapidly retrieve laboratory results, and more. Hospital-to-CHIME connectivity will simplify data submission and improve information dissemination. For example, standard reports from the CHIME database are currently made available to participating hospitals on secure networks, allowing more timely and cost-effective delivery of information. CHIME-Net also offers a Web site containing information for and about the member institutions, such as maps, directories, and continuing education calendars, as well as hypertext links to selected Internet resources.

CHIME-Net is just one of many Internet projects in the state. Ingram Roberts, chief of gastroenterology at Bridgeport Hospital, finds the Internet helpful for interinstitutional collaboration. Bridgeport is involved in a multi-institutional effort to test a terminology database for endoscopy procedures. Through a dedicated link to the Internet, hospitals collaborating in the study will be able to upload data and share research. Right now the database includes only text but Dr. Roberts envisions images and graphics being transmitted across the Web in the future. In fact, the group hopes to influence the gastrointestinal imaging market.



Minimum Hardware Requirements

A certain level of computer equipment is necessary to connect to the Internet successfully. Connections can be made with slower, older computers but will be frustrating. The following are the minimum requirements for a smooth, rapid connection over a phone line.

Macintosh: A Macintosh with a 68020 or better microchip, 8 megabytes of memory, Mac System 7 or later, and a 14,400 or 28,800 bits per second [bps] speed modem.

Windows: A PC with a 386sx or better microchip; 8 megabytes of memory; Windows 3.1, Windows for Workgroups 3.11, Windows NT, or Windows 95; and a 14,400 or 28,800 bits per second [bps] speed modem.

See "How to Connect to the Internet" for software suggestions.

Currently, the three main vendors of endoscopic equipment have proprietary systems—images created using one system cannot be viewed by another. Dr. Roberts hopes that software can be developed to convert the proprietary images to other formats; a small box on the side of a computer could instantly convert one system to another. This advance would be one step in the right direction of future patient care. For example, a patient who is visiting Connecticut might develop recurrent bleeding from a gastric ulcer. The local physician who endoscopes the patient could access a database in the patient's hospital in Illinois and see a picture of the original endoscopic procedure from the patient's record.

Future Uses

Some Connecticut physicians are already using the Internet to their advantage. For others, the benefits are still around the corner. The brief scenarios below are realistic for most physicians within the next two years.

- Physicians can call into their office's computer network from home to check email and other messages, consult appointment schedules, and analyze lab results. From the office network, it is easy to transmit patient data to the local hospital, check on continuing education events, and search the hospital library's online catalog or MEDLINE.
- Data collected by the office practice will be submitted via electronic data interchange (EDI) to insurance agencies. Patient eligibility can be assessed, Medicaid claim forms can be processed in real time, and costly paperwork and system delays can be eliminated.[6]
- As standards for EDI continue to develop, health-care practitioners will transmit more and more of their financial and clinical data electronically. For example, admission/discharge reports and laboratory results will be delivered electronically to the office practice—speeding up the flow of information. Prescriptions will be submitted to the patient's pharmacy via electronic communications as well.[7]
- The Connecticut physician will join mailing lists focusing on specialty areas, such as the Geriatric Health Care Discussion Group, the Perinatal Outcomes Discussion Group, or the Delivery of Family Practice and Clinical Medicine Discussion Groups. He will consult with specialists simply by using email or Internet teleconferencing.
- Having missed the morning's grand rounds, the physician can follow a summary on the hospital's internal Web site and add a comment to the interactive debate taking place about the topic.[8]
- With Internet access to databases such as MEDLINE, MICROMEDEX, or the hospital formulary, research can take place at a convenient time and place for the physician, instead of only when the library or pharmacy is open. Electronic research can be broader than before, as more full-text journals and textbooks are available online.
- The physician's patients can connect to both the hospital and office Web sites, and use the Internet to check for disease information, as well as directions, maps, hours, and interactive appointment scheduling.
- Telemedicine will be routine.[9] A remote physician can transmit radiologic images to an expert for consultation and have other medical specialists look at a patient's injury through an Internet video connection.
- A surgeon can practice a complicated—and expensive—procedure on an educational three-dimensional (3-D) system before operating.
- An automatic information gatherer, called a robot or a daemon, can pursue a research topic on the Internet. For example, online journal articles can be routinely scanned for keywords, automatically collected, and routed to the physician's email account for review.
- A patient can administer her own shots and monitor her blood glucose levels. She can then send this self-collected data in to her local hospital for processing.[10]
- Using a hand-held remote computer in his car, a physician tied up in traffic can tap into a database to check a diagnosis.
- Software like MedPlus,[11] which links physicians with patient records located anywhere via the Internet, can become more universal. A patient injured on vacation can be examined and treated by a doctor who consults her home medical record, including images of former trauma.
- Portable medical records can become standard issue. Physicians who volunteered for the 1995 Special Olympic World Games in Connecticut will remember that every athlete had a personal medical history scanned into an encrypted strip on their identification card.

Conclusion

Dr. Andrew Keller from Danbury Hospital says, "The Internet will help physicians work better and more effectively, but it takes time and trial and error to learn it." So, should a physician really devote the several hours per week that are needed to learn how to use the Internet? Yes! Dr. Peter Buch reflects on the casual browsing that brought him to the Virtual Medical Center: "After you see a site like that, you say, 'How can you live without a computer?'

I've learned so much from just browsing and playing with it, like kids do. It takes some time, but the investment is worthwhile."

The Internet is not just an innovation appearing on the horizon. Its impact on education, business, and medicine is already being felt and, in this age of competitive health-care markets, no physician can afford not to have some knowledge of the Internet. As librarian Michael Schott says, "I designed our Web site for five years down the road, but it's happening now. People are slowly becoming aware that this is how business is being done."

If a doctor wants to provide good customer service, he must stay one step ahead of his patients. A savvy doctor knows that patients are taking an increasing interest in their own health care—and many of them already search for information on the Internet. A physician should be able to recommend reputable sources of consumer health information, both in print and on the Internet.

To learn more about the professional side of the Internet, visit the information specialist at your institution. The hospital librarian should be able to identify colleagues in your institution who are involved with the CHIME-Net initiative, suggest conferences and meetings that offer continuing education about the Internet, and give you a quick tour of the Internet.

Acknowledgments

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How to Connect to the Internet

One easy way to gain access to the Internet (if your hospital or organization doesn't offer this service) is to use Netscape Navigator Personal Edition. This software costs approximately $40 and can be bought at any software store. For more information about Netscape Navigator, call 415/937-3777 or see: http://search.netscape.com/comprod/netscape_personal_edition.html

There are other relatively easy ways to connect to the Internet. The following Internet providers re-package Netscape Navigator and/or provide full Internet access for a monthly service charge.

AT&T WorldNet Service	http://www.att.com/worldnet/wis/	1-800-WORLDNET
Connix	http://www.connix.com/	1-203-349-7059
SNET Internet Access	http://voyager.snetnsa.com:80/sinterc.html	1-800-408-8282

Contact these service providers for limited access to the Internet, along with extra information for subscribers. These services charge a monthly fee, usually after a free trial period.

America Online (AOL)	http://www.aol.com/	1-800-827-6364
CompuServe	http://www.compuserve.com/	1-800-487-4838
Prodigy	http://www.astranet.com/	1-800-836-1183

For a broader, more comprehensive list of full Internet providers, look at The List.

The List	http://www.thelist.com/	1-203-827-6364

Internet Glossary

Baud—A measurement used to indicate data transmission speed. Used to measure the speed of modems. Often the same as bits per second (bps).

Browser—Software for using the World Wide Web. Common brands are Netscape Navigator, NCSA's Mosaic, Microsoft's Internet Explorer, and Lynx, a text-only product.

Bulletin Board System (BBS)—A repository for files and messages, which also allows users to download these files and share information with each other. Some offer real-time "chatting" with other participants. Most bulletin boards are local and quite small. Some have direct Internet connections, however, and are on the scale of commercial Internet providers.

Cyberspace—A word first used by author William Gibson in his novel *Neuromancer*. Now widely used to refer to the universe of networked computing.

Dial-up—A temporary, as opposed to dedicated, connection between machines, established over a standard phone line with a modem.

Electronic Mail (email)—An electronic system whereby a computer user can exchange text messages with other computer users via a communications network. Can be used to broadcast a message to a group of users. An email address looks like: holly@biomed.med.yale.edu

Ethernet—A 10,000,000 bit per second network connection. Much faster than a modem connection. Ethernet is heavily used for networking because it is fast and can be used with almost any brand of computer.

FAQ (Frequently Asked Questions)—A list of the most common new user questions (and answers) on specific subjects, such as how a newsgroup operates, what the rules of a game are, or how to use a piece of shareware. Freely available and widely shared, these lists were developed to end the tedious repetition of basic information.

FTP (File Transfer Protocol)—The Internet protocol that governs the transmission of files between two computers. Sometimes an account is required, but often a server will allow "anonymous FTP," which means that its files are publicly accessible.

Firewall—A security system set up to keep unauthorized users from accessing a particular network or computer.

Flame—A scathingly angry or contentious response to a newsgroup posting or a piece of email.

Frame-Relay— A type of connection where each remote site is connected to a hub and the hub is connected to the Internet. Any single site can communicate with any other member site attached to the network. The remote sites are only responsible for maintaining one connection.

Gopher—Developed at the University of Minnesota (and named after their mascot, the Golden Gopher), a hierarchical, menu-based software for navigating the Internet.

HyperText Markup Language (HTML)—The tagging language used to create documents for the World-Wide Web. Used to create the formatting and links to other documents on the Internet.

Internet—The world-wide conglomeration of computers and interconnected networks. Has no formal structure or governing body. Developed from ARPANET (an early U.S. Government network) into a huge network that shares common communication standards, called protocols. Made up of universities, local organizations, regional networks, and businesses.

Internet Address—A specific address assigned to servers on the Internet. Also known as a fully qualified domain name. Example: any.internet.address

Mailing List—An electronic discussion group, where every message is sent to every subscriber. Often called listservs. There are thousands of mailing lists on every topic, from Italian literature to vegetarian cuisine.

Modem—A device that attaches to your computer and converts the signals generated by the computer to signals necessary for transmission over telephone lines. An abbreviation of "modulation-demodulation."

Netiquette—Unwritten rules for proper behavior on the Internet. A pun on the word "etiquette."

Newsgroups—Also known as usenet discussion groups, which are electronic forums on every conceivable subject. Postings (or messages) are sent to a central delivery system. These postings can be read and responded to by readers using various newsreader software. Arranged hierarchically, newsgroups start with prefixes, such as sci. (science), rec. (recreation) and alt. (alternative). Newgroups accessible from a given site may vary, depending on which are selected by the local system administrator.

Protocols—The specific communication standards that computers must follow to interact with each other.

Router—A specialized computer that transfers data between networks over short or long distances, making sure that information reaches the correct destination.

Server—A computer that shares its services, such as printers and files, and information with other computers on a network and is often dedicated to centralized file storage.

Shareware—Software which is freely distributed on networks. After a specified trial period, users must register and pay a nominal fee. Freeware is distributed in the same way, but requires no fee.

Telnet—The Internet standard protocol that allows users to connect to and interact with remote computers, for example to search a database.

URL (Uniform Resource Locator)—A standard address format needed for World Wide Web browsers and now becoming the common way to identify the location of any Internet resource. Example: http://www.med.yale.edu/library/

World Wide Web (WWW, Web, W3)— A hypertext-based information retrieval system which links documents and data on the Internet. Using a browser software (Netscape or Mosaic are the most popular graphic programs, Lynx is a text-only browser), you can connect to other machines and files. Telnet, FTP, newsgroups and Gopher are all supported by the WWW.

:-)—This symbol is a "smiley," a way that a writer can express emotion on the Internet. Smilies are used to express happiness, anger, sarcasm, and hundreds of other feelings. Tip your head to your left to see the "face." Other examples include ;-0 (wink) and :-((frown). Also called emoticons.

Addresses (URLs) for Internet Resources Referred to in the Text

World Wide Web and Gopher Resources:

Agency for Health Care Policy and Research
http://sis.nlm.nih.gov/aids/ahcpr.html

American Academy of Pediatrics
http://www.aap.org/

American Medical Association
http://www.ama-assn.org/

Biomedicine and Health in the News
http://www3.uchc.edu/~uchclib/libcat/biompage.html

BMJ
http://www.bmj.com/bmj/

Bristol Hospital
http://www.bristolhospital.org

CancerNet
http://wwwicic.nci.nih.gov/CancerNet.html

Census Bureau Home Page
http://www.census.gov/

Centers for Disease Control and Prevention
http://www.cdc.gov/

CHIME-Net
http://www.chime.org/

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http://www.fda.gov/bbs/bbs_topics.html

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GASNet
http://gasnet.med.yale.edu/

Greenwich Hospital Association
http://www.greenhosp.chime.org/

Internet Grateful Med
http://igm.nlm.nih.gov/

John Dempsey Hospital
http://www.uchc.edu/

Journal of Biological Chemistry
http://www-jbc.stanford.edu/jbc/

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http://www.midhosp.chime.org/

National Cancer Institute
http://www.nci.nih.gov/

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http://www.cdc.gov/nchswww/nchshome.htm

National Institutes of Health
http://www.nih.gov/

National Library of Medicine
http://www.nlm.nih.gov/

NYNEX Interactive Yellow Pages
http://s9.bigyellow.com/

MMWR (Morbidity and Mortality Weekly Report)
http://www.cdc.gov/epo/mmwr/mmwr.html

PDQ
gopher://gopher.nih.gov:70/11/clin/cancernet/pdqinfo/

Stamford Health System
http://www.ctonline.com...htmlpages/stamhome.html

Statistical Abstracts Home Page
http://www.census.gov/stat_abstract/

University of Connecticut Health Center
http://www.uchc.edu/

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Commentaries

Inadequate Treatment of Opioid Dependence Due to Society's Attitudes and Beliefs

ABSTRACT—The attitudes and beliefs held by society, including health professionals, are detrimental to the health and welfare of the chemically dependent. Dependency on psychoactive agents bears the hallmarks of a *bona fide* neurological illness due to alterations in neurons affected by exogenous neuroactive agents. Emphasis on abstinence as the only acceptable goal of treatment may be harmful to those incapable of attaining a drug-free state. Other alternatives for treatment must be offered without stigmatization and bias against the drug dependent. Methadone treatment for opioid dependence needs to be promoted and liberalized, especially because the oral route of administration eliminates the risks accompanying drug injection. Patients receiving methadone must be retained in treatment rather than terminated for rules infractions that are not harmful to others. This is an urgent matter in light of the current HIV epidemic among drug injectors.

Introduction

At this time in our society there is a need for changes in the manner in which we relate to those among us who are suffering from chemical dependency. It is essential that treatment alternatives that work to abate drug injection be considered as acceptable and promoted for reasons of an overall salutary effect on the public health. Drug injection, with blood-to-blood HIV contamination by the use of unsanitary injection paraphernalia, is the second greatest risk factor in the spread of HIV infection in our country. Health-care professionals must become less addictophobic and expand their knowledge concerning the neurochemical and physiological basis of dependence on psychoactive chemicals that alter mood and affect. Education of the lay public regarding the disease concept of chemical dependency would aid in dispelling bias and discrimination against those who suffer from this illness. Methadone treatment for opioid dependence requires liberalization and promotion. The oral route of administration is an HIV prevention strategy for drug injectors. The present bureaucratic process of methadone therapy is not user friendly. Current rules and regulations fail to promote retention in treatment.

Case Histories

1. J. S. is in his mid forties. He is married and has a young child. He has a past history of heroin addiction as a young man and for more than 15 years was on methadone maintenance. His life during this time was manageable. He worked two jobs and stayed out of trouble with the law. During the six months or so preceding his disciplinary termination from the methadone program two years ago, he used benzodiazepines and cocaine. He sought additional help for multiple drug use but treatment was tied to detoxification from methadone, a course that failed. After resuming methadone treatment and undergoing counseling daily, he relapsed to cocaine use once more. No drug treatment program would accept him unless he was first detoxified from methadone. Several attempts at progressive methadone dose reduction forced him to abandon treatment against advice because of severe withdrawal symptoms. He was labeled recalcitrant, uncooperative, and manipulative. During this period he overdosed on benzodiazepines in an attempt to detoxify himself and was hospitalized.

He currently suffers from chronic hepatitis C, intractable asthma, and posttraumatic musculoskeletal ailments from an accident that allegedly produce chronic pain. His physician prescribes 90 Percocet™ tablets per month. J. S. uses these up in a week. The prescribing physician has failed to take into account the development of drug tolerance and the need to increase the dosage in order to achieve the desired result of freedom from pain and drug withdrawal symptoms. J. S. must supplement the Percocet with opioids acquired on the street to obtain some degree of comfort. His life is hell.

2. M. T., is a well educated young man in his early 30s, a heroin user since age 15, who was functioning well on methadone treatment for heroin addiction for three years. He obtained an extra 45 mgm dose to hold in reserve while visiting in Florida. He lied about this on his return to his home program. He was detoxified over a period of 21 days and terminated. Despite his admission of wrongdoing and his pledge to remain fully cooperative in the future, this punitive withholding of medication was enforced. No hearing in which he could plead for probationary status was allowed.

Since his termination he has relapsed to street drug use. He lost his job as a carpenter and has no source of income. Several methadone programs elsewhere and at a distance have long waiting lists. He has had suicidal ideation and is receiving psychological counseling in the interim.

Relapse to Drug Use and the Abstinence Syndrome: Symptoms of a Disease

These two brief case reports illustrate the intractability of opioid dependence. They depict the marked tendency to relapse despite the deep seated desire to gain and maintain abstinence on the part of the dependent person. To explain this phenomenon, it is highly likely that prolonged exposure to exogenous opioids has resulted in neuronal alteration. This theory has been proposed by Dr. Vincent Dole who, with Dr. Marie Nyswander, developed present-day methadone maintenance treatment.[1] Edward Brecher in 1972 reviewed and documented the abysmal failure of abstinence treatment for opioid dependency. He described the "'postaddiction syndrome"— the depression, anxiety, and craving that occur following detoxification and prolonged abstinence from opioid drugs and the role that this intractable dysphoric state plays in the high relapse rate (over 85%) that afflicts opioid users to this day.[2]

It is incomprehensible that my fellow physicians, colleagues in nursing, those that work daily in the drug treatment field, and even the few recovering opioid dependent people who are lucky enough to be drug free, fail to grasp the fact that neuronal changes may be a major factor in the high rate of recidivism so common in opioid and stimulant drug use and in dependence on alcohol and nicotine. The World Health Organization has elected not to use the word addiction and, instead, designate dependency on psychoactive chemicals a neuroadaptive disorder. This biochemically more accurate nomenclature would reduce the stigma, bias, and discrimination associated with being labeled an addict.

The Role of Neuroreceptors and Transmitters

A comprehensive up-to-date review of the neurochemical and genetic factors involved in chemical dependency is contained in a book written by Dr. Avram Goldstein of Stanford University.[3] A broader approach to the biochemistry of neuroactive agents is contained in a text by Cooper, Bloom, and Roth.[4] The following is a brief summary of the neurochemical effects of the two illicit drugs presently receiving the most attention and causing the most concern in our society.

The stimulant drug cocaine is known to affect certain areas in the brain where dopamine is found. Cocaine allows dopamine to flood the interface between nerve cells producing an intense burst of pleasure. Under normal circumstances dopamine is taken up again by the nerve cell. Cocaine blocks this reuptake process. If cocaine is used repeatedly, the overall supply of dopamine is gradually depleted. This progressive loss of the main chemical of pleasure gives rise to the "crash" after cocaine use and the depression and paranoia that follow its chronic use. Dopamine depletion would explain the intense craving for cocaine and the tendency to relapse despite treatment.

The receptor for opioids has been identified on certain other nerve cells. This is where those chemicals act that are generated through normal pleasurable activities like sex, vigorous exercise, or a good golf shot. These are called endorphins and enkephalins. Opioid drugs like heroin, morphine, or codeine, mimic their function. Using them repeatedly may alter the nerve-cell membrane apparatus, inducing craving and tolerance, a condition in which more and more drug is needed to get the same result. When opioids are stopped, the user then develops agonizing withdrawal symptoms. These include deep seated musculoskeletal pain, diarrhea and abdominal cramping, goose flesh—from whence the term "going cold turkey" was coined—runny nose, depression, anxiety, and drug craving.

The weight of evidence supporting the theory that neuronal damage underlies compulsive psychoactive chemical use should lead more of us to view drug issues as a medical problem, a true neurological disease, rather than a moral, ethical, or criminal problem. This viewpoint has been slow to evolve because of the deliberate avoidance of rational debate on drug issues by those in positions of power who view users of illicit drugs as criminals guilty of moral turpitude. The irrational fear and loathing concerning drugs and those that use them—addictophobia—blocks willingness to study these issues and impedes calm, logical investigation, and implementation of effective ways in which the lives of the chemically dependent in our society can be benefited.[5]

To use a commonplace word today, drugs and drug users have been *demonized.*

The Adverse Social Results of Demonization

The belief that illicit drug users are morally depraved, corrupt, and deserving of punishment has given rise to drug policies that are primarily punitive. Attempts to diminish the supply side of the drug equation include the prevention of drug influx across our borders, drug production within our borders, and the sale and distribution of these agents to consumers. Violation of the laws result in the arrest, trial, and incarceration of drug sellers and users. One and a half million people are imprisoned in the United States. We are second only to Russia in the number of citizens so confined. Roughly 70% of the prison population are there on drug related charges. The disproportionately large percentage of people of color making up this group has racist implications. The cost to the taxpayer is immense, as much or more than $30,000 per year per prisoner. Our legislators are now bent on building more jails and hiring more police and jailers. Meanwhile the price of cocaine and heroin on the street has failed to rise, a marker of a more than adequate supply. Society's war on drugs, as Duke and Gross have noted in their recently published work, *America's Longest War*, has been the

most colossal failed policy of the century.[6]

The demand side of the drug equation, on the other hand, has gotten little except lip service. The financing of drug programs from federal money has consistently been 70% for criminal justice approaches and 30% for treatment and education. The sound byte "treatment on demand" is often mentioned. In reality, this does not exist. There is minimal understanding and a great deal of confusion about what drug treatment actually consists of.

Drug Treatment Goals

Our society, viewing drug issues from the standpoint of morality, considers total abstinence from drugs and alcohol as the goal of treatment. To be ideal, this drug-free state must include conversion to modes of personal and social behavior that are held to be acceptable by a sober and law-abiding community. For instance, those who follow the 12 steps of recovery as outlined by Alcoholics Anonymous and remain abstinent from alcohol are felt to be praiseworthy. Those heroin addicts who are functioning well in treatment with methadone generally are not viewed in the same light. Many on methadone who have an accompanying problem with alcohol, for instance, have found that they are not welcome in many AA groups as long as they are taking this medication, or any psychoactive medication for that matter. This has led to the formation of AA groups for methadone patients out of their desire to enjoy the benefits of the AA program of spiritual renewal and growth in recovery. Dr. David C. Lewis noted that:

> Americans' persistent negative views about methadone maintenance stem from two important cultural attitudes in our society: 1) the stigma associated with addiction and 2) a fixation on abstinence as the only socially acceptable goal of addiction treatment. Stigma leads Americans to believe that it is wrong to treat an addiction with an addictive drug. Our idealization of abstinence—on being drug free—leads us to dismiss methadone's functional benefits.... With all other chronic illnesses that I am familiar with, functional improvement is the desired outcome.[7]

Whatever works to remove the individual drug user from the grip of the illicit drug market and from the risks of drug injection should be encouraged and implemented. Treatment modalities, including the dispensing of chemical substitutions that make the conditions of life comfortable and functional for the drug dependent, must be considered acceptable alternatives to total abstinence if attempts to achieve that state have failed.

Methadone Treatment Programs: Pluses and Minuses

Since 1968, following the initial work of Dole and Nyswander, there have been numerous studies confirming the efficacy of methadone to "normalize" the lives of the opioid dependent Methadone's effectiveness is due to its pharmacological properties. This opioid drug was synthesized for use as an analgesic in Germany during World War II because they had no access to the poppy necessary for the production of morphine and heroin. It can be given orally. Its long half life allows once-a-day administration and its smooth, even metabolism eliminates the peaks and valleys of shorter acting opioids where periods of torpor—"nodding off"—are followed by the discomfort of early partial withdrawal and craving. Study after study have proved its value, if given in adequate dosage, in overcoming drug craving and in preventing withdrawal symptoms. The patients are "normalized."

Since it is taken by mouth, injection is avoided with all of the risks of bacterial and viral (HIV) contamination and contamination with inorganic impurities such as talc. It is obvious to those interested in the public health aspects of AIDS prevention. that implementation of methadone availability for IV drug users is as necessary to slow the spread of the virus as are needle exchanges where clean injection paraphernalia are provided.[9]

A bureaucracy to dispense methadone has been created and overseen by the Federal Drug Administration the Drug Enforcement Administration and state governments. These institutions have compiled rules and regulations that, in many cases, make participation by patients difficult and hurtful. A primary concern of the bureaucracy is that methadone may be diverted and sold on the street and that its availability could possibly induce opioid dependency in others. To insure that diversion does not occur, the drug dose is routinely dispensed in liquid form on a daily basis in view of program personnel. The necessity to appear every day at specified and limited hours may interfere with work or domestic schedules of participants. Counseling is mandatory despite evidence of normal social and behavioral adjustment. After a variable period of participation in the program, marked by a record of cooperation with all rules and regulations, including absence of evidence on random urine screens of concomitant drug use, the patient may be given take-home doses over weekends. As an example of the arbitrary nature of rules relating to take-home medication, a patient who sought this privilege was told that he met all the requirements except one. He was unemployed and therefore failed to qualify. Actually he was totally disabled, on SSI, and could not work if he wanted to. The program finally granted him this privilege after a letter was submitted substantiating his disability.

Any incidents in which rule violations occur can result in loss of take-home privileges. In some instances, dose reduction has been used as a disciplinary measure and in others detoxification and termination from the program occur depending on the interpretation of the seriousness of

the particular violation of the rules or regulations. This interpretation generally is made only by individual program personnel without a hearing in which the patient or other participants who were witnesses to the alleged violation are allowed to be heard. I have previously detailed the termination of two patients whose physical and psychological health were seriously jeopardized by this process. In one instance, the Connecticut State Department of Health and Addiction Services investigated the dismissal by hearing the testimony of clinic personnel only. They never asked the patient or other witnesses to his alleged "threatening behavior" to discuss or argue his side of the story.[10]

It is obvious that programs are an overwhelmingly powerful influence in the lives of participants and that methadone is used as a tool of social control. The specter of termination drives compliance and instills fear among participants that prevents criticism or complaining about their loss of autonomy, their virtual enslavement, subjugation to external authority, and ongoing debasement.

Methadone Treatment Availability

There are not enough methadone programs available. In New York City where it is estimated that 250,000 to 500,000 are using heroin, roughly 38,000 are on methadone in programs. About 120,000 are on methadone in the United States as a whole. There has been few programs instituted in New York City in the past 20 years despite the urgent need for more methadone slots as a preventive measure in the spread of HIV infection among drug injectors, their sexual partners, and their offspring. The waiting list for admission to a program may be six months or more; so much for treatment on demand. Admission may depend on slot availability through voluntary or disciplinary termination of an already enrolled patient. According to Stanley Novick, president of the National Alliance of Methadone Advocates (NAMA) in New York City, in the vast majority of instances those who detoxify from methadone either voluntarily or involuntarily, relapse to street drug use in approximately 10 months. The overall relapse rate for opioid use, following any type of therapy, is close to 85%.

Despite the American Medical Association's resolution in favor of the distribution of methadone by physicians with training in addiction medicine, this logical method to increase the availability of this form of treatment has failed to be implemented or even discussed by the public health establishment, the FDA, and the DEA. Dr. Robert Newman states that, despite its proven effectiveness for the treatment of relapsing heroin dependency, methadone remains the only medication that cannot be prescribed for the treatment of this condition by physicians with DEA licenses.[11]

If cost is a factor to be considered, a recent article in the quarterly publication of NIDA, stated that the cost to society of maintaining a patient on methadone for six months was approximately $1,750 as compared to $21,500 for the untreated opioid user.[12] This fact, coupled with the potential for lowered medical care costs due to HIV prevention and better general health in the dependent population, should encourage the taxpayer to insist on increased methadone availability.

Abstinence Treatment

The treatment modality that is most highly regarded and sought after emphasizes abstinence. Both long- and short-term therapy of this type is available following detoxification from heroin. Long-term residential abstinence treatment is very expensive and the available slots are strictly limited in number. These in-house programs are highly touted by those with vested financial interests. They decry other approaches to therapy including methadone administration. It is difficult to assess the success rate for such treatment because of the way in which candidates for this type of therapy are selected. Many fail to remain in the early phase of this regimented and highly disciplined mode of behavioral modification. The reported figures regarding success rates of around 50% do not accurately reflect the numbers of early failures and dropouts. Despite one or two years in a protected treatment environment, the relapse rate continues to be high because of the persistence of the abstinence syndrome once the patient leaves the sequestered environment.

Coupled with long- or short-term abstinence therapy is participation in 12-step programs of recovery. Alcoholics Anonymous (AA) Narcotics Anonymous (NA), Cocaine Anonymous (CA), and analogous Al Anon groups may be beneficial in helping members maintain sobriety through the development of spiritual change and values and by sharing with and supporting individual members whose personal lives may be chaotic. Again, heroin and cocaine have higher relapse rates than the alcohol-dependent person involved in this process of recovery. This is probably due to the neuronal systems that are involved and the degree to which they are altered.

At present, there is interest in the use of oral naltrexone (Revia™) for relapse prevention in the alcoholic particularly. This drug, an opioid blocker or antagonist, has been used in the treatment of opioid addiction without great success. Many who take it are those mandated to do so by an overseeing authority—opioid dependent physicians in physician health programs, for instance. This may be because this medication blocks spontaneously generated opioids such as endorphin, dynorphin, and enkephalin, the products of naturally pleasurable activities. Dr. Steven Hyman, a believer in the neuronal modification concept of

dependency, is skeptical about the ability of naltrexone to help with relapse prevention because of the blocking of naturally produced "good feelings"—anhedonia. The cost of the drug is also high, $5 per 50 mgm dose.[13]

Alternative Therapies

Other treatments include psychological counseling, the use of psychotropic agents, and those that effect serotonin brain levels such as Prozac™. Acupuncture has been touted as effective. Adequate statistical support for these treatment alternatives is lacking. There is need for therapeutic trials of therapies that can reasonably be expected to be effective.

Treatment, in short, is varied and the efficacy of any single method remains unproved with the exception of Alcoholics Anonymous for the alcohol dependent and methadone for the relapsing opioid-dependent person.

Cocaine

Cocaine dependency stands out starkly as a condition that resists control by methods effective with other chemicals. Perhaps this is due to the unique neuronal system involved and the fact that, unlike opioids, craving is periodic and withdrawal is not the agony commonplace in opioid deprivation. Cocaine deprivation induces depression and paranoia. The physical aspects of the absence of cocaine use bear no relationship to the rigors of withdrawal from heroin, for instance. The public should realize that the prohibition of the manufacture and distribution of amphetamines (speed) in the 1970s has resulted in the replacement of that stimulant by cocaine produced chiefly in Colombia and smuggled across our borders. In addition, methamphetamine is being illegally manufactured and distributed in this country. It can be snorted, injected, or smoked. It would probably be wise to reconsider the ban on amphetamines in view of the millions of cocaine users contributing to the enormous profits of the black marketers. Treatment alternatives must be vigorously sought as it is now becoming apparent that the promiscuous sexuality associated with stimulant use is a factor in the spread of HIV infection among users and their consorts.

There has been minimal investigation of applying what has been learned from substitution treatment with methadone for heroin dependence in the management of other drug dependencies such as cocaine addiction. Work by Hitzig and others from NIDA suggests that the use of amphetamine analogues such as phentermine and fenfluramine may be effective in controlling craving for cocaine, alcohol, and food. The relapse rate for cocaine use may be lessened by the use of these agents.[14] Distribution of these chemicals to relapsing cocaine-dependent people might serve to "normalize" their lives in the same manner that methadone does for the heroin dependent. This approach requires wider study to determine its clinical efficacy. If methadone patients are found to be dependent on cocaine as well—and this is not uncommon today—why should they not receive medication to prevent illicit cocaine use at the same time and place that they get their methadone? At present, if they test positive for cocaine use, they may be terminated and forced to return to street acquisition of both drugs.

Treatment of Chronic Pain

The treatment of chronic pain is a therapeutic dilemma shared by many of my colleagues today. Many people with chronic painful conditions who are supplied with opioid drugs by prescription through the medical care system will develop the need for increasing amounts of opioids over time. In many cases, the prescribing physician will misinterpret this normal physiological development of tolerance as abuse. Not uncommonly the doctor will refuse to increase the dose and may even reduce it or cut it off completely. This leads to doctor shopping for drugs on the part of the patient and even to the felony of prescription forgery or theft. These unfortunates are then labeled as deceitful and manipulative in their attempts to maintain a comfortable life style. In view of the short half-life of codeine analogues such as Percocet™, Tylox™, or Percodan™, they do not experience the smooth and even effects achieved from taking long-acting methadone. Short acting opioid levels vary rapidly with peaks and valleys producing sedation on the one hand and partial withdrawal on the other.

Patients with genuine chronic painful states are excellent candidates for methadone administration because of this difference in the smooth duration of action. If this medication is used in this fashion, however, the physician is exposed to investigation of prescribing practices and to possible loss of license by the state authorities and the DEA. Also, once the patient with chronic pain becomes tolerant to the methadone dosage, supplemental short acting opioids must be added to relieve the pain that recurs when tolerance is achieved. Physicians misinterpret the complaints of discomfort by methadone program participants as drug-seeking behavior and will often refuse to provide them with adequate analgesia. This is not uncommon when methadone patients are admitted to the hospital for surgery. Their usual dose of medication must be supplemented with short-acting opioids. The methadone may need to be given twice a day in divided doses as well.

I have recently asked "A Better Way," a group advocating drug policy changes in Connecticut, to advocate for legislation dealing with the issue of rational treatment of patients with chronic pain. This would provide for analgesics to be prescribed for pain in large enough amounts to overcome drug tolerance and for prolonged periods without either the patient or the prescribing physician running

afoul of the narcotics bureaucracy. This statutory provision would benefit those patients in chronic, unremitting discomfort as well as protect their physicians from persecution and prosecution by narcotic agencies as well as the state licensing authorities. Providing for the comfort of terminally ill patients would be effective in reducing the clamor concerning euthanasia and physician assisted death. Nothing has been done about this issue as yet.

Conclusion

Drug dependency is a *bona fide* neurological illness. Treatment that restores the dependent person to a comfortable and functional existence is to be sought after. Oral pharmacological therapy that accomplishes this goal needs to be supported and expanded especially during the current epidemic of HIV infection among drug injectors. Drug policies should be formulated with the medical facts of dependency in mind. A study of the issues of drug use, alternative therapies, and associated criminal, racial, and social problems is urgently needed.

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On Federal Regulation of Methadone Treatment

A recent report from the Institute of Medicine (an affiliate of the National Academy of Sciences) provides an authoritative review of the history and consequences of federal regulation of methadone treatment.[1] It examines the assumptions that justified imposition of special restrictions on prescription of methadone and the effects of enforced guidelines on the function of treatment programs.

Since the Narcotic Addict Treatment Act (1974) authorized an unprecedented restriction of the right of physicians to prescribe an approved drug, the experience of the past 20 years can be seen as a major experiment in governmental regulation of medical practice. Given the controversial nature of the subject, both the government and the medical profession in general are fortunate to have had the results of this experiment evaluated at the highest scientific level. Quite properly, I was not included in the deliberations for the Institute of Medicine report. My views on the subject of regulation are on record[2,3] and could be weighed on the same basis as other opinions, while my direct participation in the meetings might have biased the discussion.

The major finding of the study is that the hazards of diverted methadone have been significantly overestimated by legislators and by the Drug Enforcement Administration (DEA). Although methadone is readily available on the black market, it has not produced a wave of new addicts. To quote from the report,

> What happens to diverted methadone? Methadone has rarely been the preferred drug of abuse by users of illegal drugs. Its action is too slow, and the level of euphoria it provides, particularly when taken orally, is too mild for most drug users to select it over other opiates. Rather it has mainly served as a way to avoid or end withdrawal symptoms, as a form of self-treatment for heroin addiction or as a substitute for heroin or other opiates when they are in short supply.
>
> What medical harm does diverted methadone do? Although methadone has the potential to cause death in individuals who lack tolerance to it or opiates in general, its use primarily by individuals who are dependent on, or tolerant to, opiates results in minimal medical harm. Although the risk of medical harm of street methadone is greatest for non-tolerant persons, the number of cases in which methadone has been documented as the sole direct cause of death is very small."[1(p115)]

The critical issue of so-called methadone-related deaths (based on the finding of methadone in the urine of deceased individuals by medical examiners and mention of methadone in the Drug Abuse Warning Network reports from emergency departments) is also evaluated in the report:

> The DEA argument [of an extraordinarily high mortality rate associated with methadone] implies a causal relationship between volume of methadone distributed and mortality, but DEA makes no serious analytical effort to assess whether the implied causality is genuine or spurious. In fact, as indicated above, there are serious reasons to doubt causality. The DEA argument cannot be accepted at face value but requires a clinical assessment of whether the presence of methadone in decedents was causal, contributing, or independent. Absent such analysis, the "ratio" argument should not be used to justify opposition to methadone pharmacotherapy.[1(p105)]

In conclusion the committee stated:

> The Drug Enforcement Administration should focus its attention on standards for the physical security and record keeping associated with the safe handling, storage, and dispensing of opiate medications (eg, methadone and LAAM [L-alpha-acetyl-methadol]), as they do with other schedule II drugs, but should have no role controlling or limiting medical practice.[1(p11)]

The committee did not recommend an abandonment of controls. I agree with the following statement in the executive summary: "A need exists to maintain certain enforceable requirements to prevent substandard or unethical practices that have socially undesirable consequences."[1(p5)]

In my opinion, the government's "war on drugs" has disproportionately emphasized the need to limit the availability of addictive substances, while restricting medical efforts to reduce demand. The Institute of Medicine report suggests that a reallocation of priorities within the U.S. Public Health Service could assign responsibility for oversight of methadone to a division more sensitive than DEA to the balance between treatment and prohibition. Rather than producing a flow of negative propaganda (anecdotal accounts of medical misconduct and misleading reports of socalled methadone-related deaths), a medically oriented oversight agency could improve treatment services by helping clinics find better locations and allowing more flexibility to individualize treatments. Public acceptance could be enhanced by reporting the achievements of methadone clinics: termination of heroin use, social rehabilitation, reduction in criminal activity, improvement in health, and reduced transmission of hepatitis and acquired immunodeficiency syndrome.

Given the magnitude and complexity of the public health problem of addiction, the federal government should make optimal use of all available treatment resources to reduce demand. This has not been achieved under leadership from the DEA and its predecessors, the Federal Bureau of Narcotics and the Bureau of Narcotics and Dangerous Drugs. In my opinion, Congress would be wise to act on the advice of the Institute of Medicine.

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Reprinted with permission of *JAMA*, October 25, 1995—vol. 274, no. 16, p 1307.

Barbarism Is Part of Human Nature

The most disturbing book published in recent memory is *Hitler's Willing Executioners: Ordinary Germans and the Holocaust,* by Daniel Jonah Goldenhagen. With overwhelming evidence and logic, Goldenhagen debunks the myth that the Holocaust was the creation of an evil man who terrorized the German people into "following orders." Rather, he postulates it was the logical endpoint of centuries of German anti-Semitism and intolerance.

Goldenhagen reports that Hitler did not need to coerce the Germans into participating in the unspeakable barbarities in what became humanity's darkest hour. There were plenty of volunteers. His thesis has unleashed a raging debate in academe: do humans engage in such barbarism because of conditioning, or is it part of our nature. The answer, sadly, is both.

Several decades ago, social scientist Dr. Stanley Milgram performed an interesting experiment. He placed an actor in a booth and hooked him up to a wire. Participants in the experiment were asked to teach the actor a task and administer a shock of increasing intensity when the actor has performed the task inadequately. Of course the actor was receiving no shock, but the participants didn't know this. Milgram found that a large percentage of the participants were capable of giving lethal shocks, even though the actors feigned intense pain during prior shocks. Milgram came to the glum conclusion that one-third of the human population was emotionally capable of working in a concentration camp.

In his classic, *King Solomon's Rings*, evolutionary biologist Konrad Lorenz postulates why humanity is unique in the animal kingdom in inflicting senseless pain on its own species. Lorenz noted that a species' tendency towards violent behavior among its members is inversely proportional to its strength.

For example, rabbits are the most violent of creatures. Mercilessly gnawing at a competitor for a mate, rabbits are capable of inflicting tremendous pain but lack the physical strength to cause death. Gorillas, on the other hand, are relative pacifists. Fights among males for mating rights consist of a single blow. The weaker male immediately concedes. Bears don't even bother to fight. They map out their territory by clawing up a tree. Smaller bears making lower claw marks conclude that there is no sense in fighting a larger opponent and move somewhere else.

Why is this? Lorenz theorizes that since both bears and gorillas are physically equipped to kill each other, fights rarely escalate to a lethal level. Such behavior is not good for the survival of the species.

So why do humans engage in such sadistic and brutal behavior? Lorenz believes human intelligence evolved too quickly, without a concomitant decrease in our violent instincts. Our primordial ancestors quickly realized that while crushing a human skull was virtually impossible with a fist, it could easily be accomplished with a rock. It takes tens of thousands of years for evolution to cause physical and behavioral changes in a species. But in the case of humanity, it took only a few thousand years to perfect the technology of killing. In fact, in the past one hundred years, we have "advanced" from primitive Gatling guns to hideous thermonuclear weapons that can destroy the planet. Yet our primitive and barbaric instincts still lurk in the hypothalamus and limbic system of our brains.

Any neophyte politician soon realizes that appealing to people's emotions gets you farther than appealing to their logic. As has been shown so many times in history, leaders often assume power by fallaciously blaming a particular group for economic and social difficulties. That is why it is so important that our democracies have independent media outlets that can fearlessly expose politicians who engage in demagoguery and prevent monsters like Hitler from emerging. Diffusing power is the best way to insure that our barbaric impulses don't get the better of us.

Joseph Bentivegna, M.D.

Rocky Hill

50 Years Ago
From *The Connecticut State Medical Journal*
July 1946

Hazards of Compulsory Health Insurance

ELIZABETH W. WILSON

Barrows National Business and Financial Weekly,
April 8, 1946, reprinted in Insurance Economic Surveys

PROPONENTS of compulsory health insurance in the United States, through design or mere good luck, have contrived to keep the debate on the level of humanitarianism, where it isn't too difficult to prove that some Americans who get no medical attention these days would get some under their scheme.

Thus opposition to the Wagner-Murray-Dingell bill has been left largely to the medical profession, which argues, chiefly, that it can do the job better and cheaper by itself than with Big Government at its elbow.

This is the shirking of a plain duty by the business community. Business and industry, in the long run, must provide a rising standard of living for the country. Business and industry should examine compulsory health insurance not alone for the desirability of its professed goals—no one quarrels with those—but also as to the ultimate cost and the braking effect that cost will have on every activity of the nation.

The Wagner-Murray-Dingell bill, if passed, will make this country the forty-second to promise workers and their dependents medical care and cash indemnities for wage losses due to illness. Experience in these other countries offers us some clues as to whether the nation's payrolls can bear this load in addition to payments for old age benefits and unemployment compensation.

Reprinted from the *Connecticut State Medical Journal*, July 1946.

The size of the burden of compulsory health insurance costs and its relation to kindred burdens already being borne are consistently underestimated by the Wagner-Murray-Dingell bill's proponents. President Truman has said that from the outset the medical benefits of the bill will cost about $3.25 billion a year, or 4 per cent of payrolls. Experts say this is over-optimistic; that the initial cost will be nearer $4 billion a year than $3 billion.

On top of that 4 per cent, cash benefits will start out by costing almost 2 per cent of the national payroll. That's also on top of the 2 per cent now going into old age and survivorship benefits, and the 1.8 per cent on an average that is paid for unemployment compensation.

Many competent observers say that even this 9.8 per cent of payroll figure is too small to start with, and there's no room for doubt that it will soon be far above this total.

First, medical costs will increase. "Adequate medical treatment" is becoming a more and more expansive and expensive term. Laboratory analyses, x-rays and the services of specialists are costly. More and more expensive drugs are prescribed oftener and oftener.

Proponents of health insurance contend that employers will be reimbursed for their increased tax payments by a rise in productivity of their presumably healthier employees. The fact is that the claim rate continues to rise every year. Assuming that a certain rise in early years would be due to the fact that sick persons, who nowadays continue to work because they have to bear the whole burden of laying off, would feel they could afford to quit work and take treatments, the load should flatten out after awhile.

If it doesn't—and it hasn't in any other country—either national health isn't improving as promised, or else malingering isn't being dealt with firmly enough.

Cash benefit costs will increase with medical costs. In England, the claim rate for wage loss benefits increased 50 per cent in six years. In Germany it trebled between 1885 and 1930. In England a survey in 1938 showed that 15 per cent of those receiving cash benefits were "not unable to work."

Malingering will be worse in this country than in England because here it is planned to operate the whole scheme by a federalized bureaucracy, whereas the Approved Societies, which are cooperative groups of workers, manage the British benefits. Workers are obviously better placed to combat malingering than are agents of a democratic government.

In the light of these considerations, it appears probable that health insurance would cost more than 8 per cent—some say 10 per cent—of the payroll of insured workers during the next ten or fifteen years. That would be a load of $7 billion by 1960. This estimate is reinforced by the 300 per cent rise in per capita costs of health insurance in Germany from 1914 to 1929, and the 250 per cent increase in Britain in the same period. Worse yet, actuaries estimate that the increase in costs won't flatten out for 50 years.

Unemployment compensation costs can be expected to rise, too. The current 1.8 per cent rate applies in a period of high employment. Considering the constant pressure for more liberal benefits, and the probable level of peacetime unemployment, it's highly optimistic to set the future annual level premium cost of unemployment insurance at as little as 2 per cent after the reserves accumulated during the war are paid out.

Old age and survivorship benefits have cost less than was expected during the war. Many old people returned to work; they will retire again and draw their benefits. Moreover, there is a move afoot to liberalize the benefits. Actuaries estimate that under all reasonable assumptions old age and survivorship benefits will cost at least 4 per cent of the payroll some time before 1960.

Although there is a reserve for this type of insurance, it is much smaller than was originally contemplated, because Congress continues to defer the increase in taxes which would build the reserve to its projected size. This means that in a few years the whole social security bill will have to be paid on a current cost basis.

In short, during the next ten or fifteen years, the total annual cost of social insurance will be somewhere between one-seventh and one-sixth of the payroll, or $10 to $12 billion. It is almost certain that before the costs are stabilized, they will equal or exceed those of the British system which are estimated at 24 per cent of the wage bill.

It would be inexpedient to have the worker and employer bear this whole cost. The May 1945 edition of the Wagner-Murray-Dingell bill provided that the employer and employee should each be taxed 4 per cent of the payroll. Thus from the outset a large and increasing sum would have to be defrayed by the general taxpayer. Already he has to meet the costs of the federal and state governments, as well as interest on the public debt, a burden which will probably not fall below $30 billion a year for many years to come.

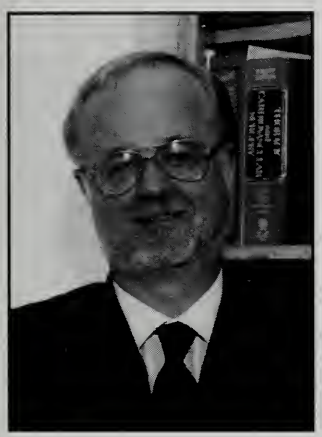
Besides supporting the various governments and paying their debts, the general taxpayer—either as an individual or a corporation—is the source of funds on which business draws for expansion and research necessary for increased productivity. The crux of the economic problem of health insurance is this:

"Can business expand and become more productive if the funds of the general taxpayer are curtailed by taxes to meet an increasingly heavy social security burden on top of his other commitments?"

Aside from the tremendous cost and the grave political dangers, there is the major consideration that the health insurance probably won't even have the beneficial effects claimed for it.

This doubt is not based only on the fact, heretofore mentioned, that the rate of claims never levels off, as it should if public health were really growing better. Sir Henry Brackenbury, one of the most distinguished British advocates of health insurance has admitted that any betterment in the health of the people may be due "to education, public health measures and increase in medical knowledge," and not to the health insurance system itself.

Playing Politics with Lung Cancer Patients



Last year a letter from conservative House Majority Leader Richard Armey (R-Texas) was circulated to 82 corporate executives in an effort to encourage them not to make contributions to what he considers liberal causes. He has labeled these causes as being antibusiness and for big government. Included in this letter was a copy of the book, *Patterns of Corporate Philanthropy,* which rates contributors and recipient groups on a scale of one to eight, one being "radical left" and eight being "conservative." On this scale the American Cancer Society was rated as three, or liberal. This was part of Representative Armey's and other conservatives' efforts to "defund the left" and is part of a politically motivated high-profile effort by conservative Republicans to launch a high-profile assault on what they consider to be liberal organizations such as the National Endowment for Arts, the Public Broadcasting System, Planned Parenthood Foundation, and many others.

Perhaps the most controversial organization in this effort has been the American Cancer Society. The reason for Representative Armey's and others' ire in this matter has to do with the American Cancer Society's strong and persistent policy against smoking. It is well known that the single most important preventable cause of death and disease in the United States is tobacco. In excess of 400,000 lives are lost due to smoking and tobacco-related illnesses such as cancer of the lung. More lives and money could be saved by preventing this disease than any other single action taken as the part of social policy in the United States at the present time. This is simply good health policy, something which the government should be interested in. It is not based on politics; it is nonpartisan and nonideological.

Roll Call, a capitol hill newspaper, has noted that Representative Armey is among several United States Representatives who must leave the floor of the house to smoke. The smoke-free House of Representatives is no doubt an irritant to him and may be another reason why he wishes to "defund" the American Cancer Society. Representative Richard Armey, the smoker, should heed and learn from former Speaker of the House James Wright, also of Texas. Wright was a smoker who now suffers from cancer of the mouth.

In the past, the American Cancer Society has not accepted federal funds, although that is changing. The American Cancer Society has always relied upon the contributions of individuals and corporations. The American Cancer Society is a private nonprofit agency which is the single largest voluntary organization in the United States and supports the single largest privately funded cancer research program in the United States. This program has contributed funds to 28 American Cancer Society researchers who have subsequently earned the Nobel Prize. This is a sterling record on the part of nongovernmental funding and contributions.

The American tobacco industry spends more than six billion dollars per year advertising a product known to be detrimental to the lives of Americans. There are millions of dollars being contributed in lobbyist fees to congressional and other political leaders by the tobacco industry.

The United States government, including Representative Richard Armey, should be interested in the health of the American people. It is unconscionable on his part to be opposed to good-health policy for the American people. It is incredible that Representative Armey does not support good health. The American Cancer Society is neither Democratic nor Republican; it is neither conservative nor liberal. It stands for the control of cancer and alleviation of suffering associated with that disease. It must never turn away from this mission in spite of what Representative Armey and all the legions of conservatives, liberals, or any other groups say to the contrary. What is unimpeachable and excellent health policy in terms of cancer prevention, cancer control, and alleviation of suffering must always be followed regardless of what political leaders in the Congress feel.

As an advocate of sensible and sane health-care policy, the American Cancer Society deserves your support and your charitable dollars.

Michael M. Deren, M.D.
President

M.D. Health Plan has been through many changes in the past year. The merger with Health Systems International has allowed us many new and exciting opportunities, including a Personal Medical Management System:

"the right service by the right provider at the right time."

Nothing should stand between *you* and your *patients*

We know that the relationship between physician and patient is the most important. As an HMO, our responsibility is to be a resource to those relationships, working closely with our physicians to assist in the direction of patient care in the most efficient way possible while focusing on high quality. Outcome is still the best measure of our success, not the bottom dollar. Just doing the right thing will always be the most cost effective.

It's also important to know that the CSMS–IPA remains *separate* from the HMO and is owned by the Connecticut State Medical Society.

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The Century of the Automobile: Random Reflections on Technology

ROBERT U. MASSEY, M.D.

IN a column last month George Will reminded us that 1996 marked the hundredth anniversary of the automobile. That is about right. An internal combustion engine powered by illuminating gas was first built in 1860 by Etienne Lenoir in Paris, and in that same year by Eugenio Barsanti and Felice Matteucci in Florence. (Actually Christiaan Huygens made an engine driven by gunpowder in 1663.) Gottlieb Daimler, Wilhelm Maybach, and Karl Benz were producing benzene-fueled internal combustion engines in 1882. But in America the first gasoline-driven automobile was built in Springfield by Charles and Frank Duryea in 1893, and they went into production in 1896 and sold 16 motorcars. For a time it appeared that either Hartford or Springfield would be the center of the new industry, but in the end Detroit won out. Ransom E. Olds was mass producing Oldsmobiles there between 1901 and 1904, and Henry Cleland was putting Cadillacs together using interchangeable parts by 1907-08. In that year Henry Ford achieved his dream to produce "the car for the multitude" for $600, and in 1914 the Model T was coming off a band conveyor or moving assembly line in Dearborn at the rate of 1,000 every day. In 1924 the price of the Model T was $295 and two million were produced.

Aldous Huxley wrote *Brave New World* in 1931, setting his futuristic novel in the year 632 A.F. (after Ford). The inhabitants of that world invoked Our Ford (or sometimes Our Freud), and, because there was no longer "a thing called God," made the sign of the T on their stomachs. "All the crosses had their tops cut and became T's." Huxley, as it turns out will prove to have been a better prophet than George Orwell in his 1949 novel *Nineteen Eighty-Four*. Since we are now perhaps in the year 82 A.F., Huxley's timing was off; his brave new world should make its appearance easily by 150 A.F. when "viviparous mother" will be a smutty expression, and, as taught by his fordship, Mustapha Mond, when it comes to sex, "everyone belongs to everyone else."

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

Our first family car was a 1921 Model T, and like most Detroit kids, I can still name every car my family or I have owned since then, including the year of purchase. In high school shop we took a Model T down to its constituent parts (reductionism!) and then reassembled it. The world revolved around the motor car; my father read the Sunday paper in our '29 Hudson. After church we washed the car, polished the chrome, had dinner, and then motored around Belle Isle. Our next door neighbor, our family doctor, took me on his house calls in his 1930 Buick five-passenger coup. In his later years—I had finished medical school—he was a plant physician for General Motors, Chevrolet Division, as I recall. My girl friend's father was head of the Chevrolet Truck Division.

Perhaps no other piece of 20th-century technology has changed the way we live as much as the automobile. Of course, its invention was inevitable once oil from which gasoline could be distilled was first pumped from the ground in the 1850s. Hence all the confusion about who was first; everyone was thinking of the possibilities and the wonderful 19th century was prolific in its generation of technologic geniuses with a keen business sense.

The coming of the motor car followed shortly after the rise of the modern hospital. It was the motor car, not the hospital, that made modern medical care possible for the 50% of American families who still lived on farms in the 1920s and early 1930s. Even in the cities house calls were the norm, and with a telephone and his automobile the physician was available to everyone. Thanks to the automobile, and the electric trolley that came in at about the same time, medical care could be provided in the office or at home quickly and efficiently, and the motorized ambulance put the hospital within reach of emergencies almost anywhere.

Long distance travel did not yield so easily. When Walter Albion Hewlett, second chairman of the University of Michigan's department of medicine (1908-1916) accepted a call to Stanford, he and his wife sent their children ahead by train, and started off in their open Overland motorcar in July 1916 for San Francisco. The

trip, ending at Dr. Hewlett's father's ranch in California, took one month. Thunderstorms, camping out, muddy roads, flats, and mechanical breakdowns made transcontinental travel more than a little daunting. Even in the 1940s I knew only one physician who had driven all the way to California, and he and his wife admitted it had been no picnic. In 1950 when my wife and I moved to Albuquerque, we too put our children on the train with their grandmothers, but we made the trip in seven days following old route 66 and carrying plenty of water, food, and extra gasoline!

The founder of the clinic that I joined in Albuquerque, Dr. William Randolph Lovelace, had in the early years of the century been a horse-and-buggy doctor at Fort Sumner in the Pecos Valley, keeping always at hand "a comforting possession," his Iver-Johnson revolver. From 1906 until he moved to Albuquerque in 1913, he spent most of each day on horseback or in his buggy caring for patients throughout the vast area of the mid Pecos Valley. When he moved 150 miles west to Albuquerque he bought his first car. He once told me that making housecalls in town took up half his time. He referred to these trips around this rapidly growing city as "going Buicking." House calls were still the norm in 1950. During my first five years there, "going Chevying" filled most of the morning, and there were always several calls to make after office hours, and often one or two during the night.

As with all technologies, there is a dark side. While most inventions before the Renaissance were in response to problems waiting to be solved, such as the overshot waterwheel, in more recent times each generation of technology has in it the seeds of the next. The process is unstoppable, and continues ever more rapidly quite irrespective of need, but rather creating need, and without a thought given to human consequences. I doubt that anyone, not even Mr. Ford, could imagine what his "car for the multitude" would bring. Good and evil effects with no one keeping the books, and with almost no thought to the happiness and well being of the generations 60 years away, far out of eyesight and of little concern.

History progresses, not as the Greeks and Nietzsche thought, in cycles, although there are cycles within its forward movement, but rather in response to technology and population growth—even this latter mostly the outcome of technology. "Things are in the saddle and ride mankind," as Emerson so often is quoted, and that is because population growth, leading to war, and unplanned technological innovation are really biological phenomena, random, blind evolution, very much in control. The anthropologist, Loren Eiseley, thinking of nuclear energy and the bomb, once wrote that man was "the lethal factor." Like the lethal gene which determines the death of cells, and finally of the entire organism, man in his pride and his technology must finally play out the last act. He may or may not blow up the planet, it hardly matters. When geneticists find a way to turn off the l-gene in our cells, death will be no more, suicide will be the only way to end the boredom, both past and future will cease to be, as the poets predicted, and the world will end, in T.S. Eliot's words, "Not with a bang but a whimper."

Francis Bacon wisely noted that "Mere power and mere knowledge exalt human nature but do not bless it." He also said, in a fit of hope, that "We must gather from the whole store of things such as make most for the uses of life."

It is unlikely that we will heed the old lord chancellor. But now we're talking gloomy eschatology; the Greeks would have said it was no more than our Μοιρα, our fate. I have a good friend and brilliant colleague who agrees with all this but wants to face it boldly, roaring with great glee down the freeway a hundred miles an hour in his Porsche ragtop.

The Lovelace family homestead at Fort Sumner, and a later, perhaps '27 Buick?

Reprinted with permission from *The Lovelace Medical Center: Pioneer in American Health Care,* by Jake W. Spidle, Jr., Albuquerque: University of New Mexico Press. 1987.

This Month's Reading in Review

TIMOTHY B. NORBECK

In a May 13th speech, Chicago's Catholic Archbishop, Joseph Cardinal Bernardin, urged leaders in the health and business communities "to see that the economic goals of 'managed care' don't interfere with expanding access to health care for the poor and uninsured..." He went on to say that "managed care contains within it the potential for creating as many problems as it solves and that financial incentives to conserve resources can lead to providing too few services even as the traditional system can lead to the provision of too many services."

*Chicago Sun-Times (*14 May 1996*)*

There were 223 health-care mergers nationwide in the first quarter ending 31 March, up 34% from the previous quarter, according to financial services firm Irving Levin Associates ... While hospital mergers and acquisitions grew by only 4.2%, hospitals had the most transactions for the period (49) ... Long-term care saw the biggest growth, with 28 deals, or 86.6% more than the previous quarter ... HMO transactions rose by 50% to 16 for the quarter.

Modern HealthCare (27 May 1996)

"Americans prefer to believe that high and rising health care costs are primarily the result of waste, fraud, and abuse. If only we got rid of all the unnecessary tests and treatments, or slashed the excessive paperwork, or got tough on Medicaid cheats and profiteering drug companies, then presto, the problem would be solved. But experts know that the real causes are far more intractable: fabulous (and fabulously expensive) new medical technologies, cost-blind benefit and insurance systems that exempt most Americans from having to make choices about treatment, and the American tendency to disdain limits, including the ultimate limit—death itself."

Peter G. Peterson

The Atlantic Monthly (May 1996)

Monday morning is the most likely time for working people to suffer a heart attack ... Research on more than 5,000 heart-attack victims confirms preliminary findings from a small group of patients reported on two years ago ... Monday is the day of peak risk, and Sunday is the day of lowest risk for people in the working population ... The peak time on Mondays: between 7 and 10 a.m., reports the study in *Circulation* ... Heart-attack rates are 33% higher on Monday.

USA Today (9 May 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Electoral Catch-22: It is no surprise that Medicare is the top issue for senior voters in various polls, but the budget deficit is second, "making this group one of the more difficult ones to please in coming months."

The Wall Street Journal (17 May 1996)

In a survey of California residents conducted in late February by Charlton Research Company, voluntary health agencies (such as the American Heart Association), and personal physicians were the most trusted by respondents ... Health maintenance organizations were the least trusted.

Research America Press Release (28 May1996)

Totally Useless Information Award: A survey for Seymour Housewares Corp. of Seymour, Indiana, finds that the typical household keeps an ironing board for 17 years.

The Wall Street Journal (16 May 1996)

Dumb and Dumber: Dennis Gene Chester, 31, was arrested for selling crack cocaine to a uniformed officer in the parking lot of the Clearwater, Florida, Police Headquarters in February ... Said Chester: "I knew I was taking a chance. I guess I lost."

Washington City Paper (10 May 1996)

According to a federal jury decision rendered 21 May, U.S. Healthcare Inc. violated antitrust and racketeering laws by coercing pharmacies to switch their own employees to its health plans ... The jury ordered U.S. Healthcare to pay a total of $1.6 million in damages to Brokerage Concepts Inc., of King of Prussia, Penn., a benefits administrator that sued after it lost the health care policy of a suburban Philadelphia pharmacy chain ... Brokerage Concept's president, Arnold Katz, said that "we've always believed that employees should have the right of freedom of choice in their health care plans."

The Hartford Courant (23 May 1996)

Only in America: Salmon farmer Shawn Hallisey entered Maine's second congressional district primary back in 1994 ... In 1983, he ran a red light in New London, Connecticut, and plowed into another car, killing a 23-year-old teacher ... Days after that conviction, he was arrested for drunk driving and then for beating his wife ... He told Maine Public Radio that the lessons he has learned from the criminal justice systems in Maine and Connecticut will help him to make the "tough decisions" in Washington ... The citizens of the second district thought otherwise, however, and gave him only 1% of the primary vote.

The New Republic (10 October 1995)

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

Subacute Thyroiditis as Fever of Unknown Origin

To the Editor: A 58-year-old Portuguese female was seen by her family physician in early September with a week's complaints of dizziness, left earache, sore throat, and neck pain. She had no pets and there been no recent travel. Initial evaluation revealed nonspecific fever of 38.1° C, and she was treated with Tylenol for presumed viral process. She returned four days later with continued complaints of sore throat, nasal congestion, headaches, and left-sided tinnitus. Temperature was noted as 37.3° C, and she was started on a course of erythromycin. Over the next three weeks she felt no better, and her fever of 37.7° C continued. A blood cell count showed white cells of 11,400 per mm with a normal differential; hematocrit was 38%, and red blood cells were normocytic. Her erythrocyte sedimentation rate (ESR) was 80. Liver function tests were normal; T_4 was 7.4 μg/dL, T_3 uptake was 30%, free T_4 was 2.2 ng/dL. Sinus films were negative, as was a thyroid scan and a computerized tomographic (CT) scan of the abdomen and pelvis. One month after the onset of her illness she visited another physician who noted a fever of 37.4° C, with a nontender thyroid palpable in the lower right area more than in the left and there was no lymph node enlargement. Chest films were negative, as were repeat sinus films. T_4 was 7.9 μg/dL, T_3 uptake was 33%, TSH was less than 0.03 μU/mL, ESR was 80, white blood cell count was 8900 with a normal differential, hematocrit 34%, and a PPD skin test was negative. She was seen again two weeks later, now complaining of right low neck pain with dysphagia. Examination revealed a fever of 38° C, with a brawny and very tender right low neck area. Blood cultures were negative, as were thyroid antibodies, antinuclear antibodies, and rheumatoid factor. A CT scan of the neck was interpreted as showing a large mass or nodule in the right lobe of the thyroid. A thyroid scan and uptake were obtained several days later which revealed "low radio-iodine uptake and poor thyroid trapping function." She was given corticosteroid therapy, and when seen two weeks later, felt much better but still with sporadic low-grade fever in the evening. Examination revealed a right greater than left palpable temporal artery without tenderness or ropiness. ESR was 38. Bilateral temporal artery biopsies were negative. Prednisone therapy was tapered off. Approximately two months after the onset of this illness, she felt completely well. Thyroid tests were: T_4 was 1.6 μg/dL, T_3 uptake was 22%,TSH was 62 μU/mL; thyroid antibodies were negative. She was begun on thyroid hormone replacement therapy. Two months later her T_4 was 8.5 μg/dL, TSH 4.7 was μU/mL; and her complete blood cell count was normal. An attempt was made to discontinue Synthroid but in another two months her T_4 was 7.0 μg/dL, T_3 uptake was 22%, and her TSH was 12 μU/mL. Synthroid therapy was restarted at a low dose with eventual successful discontinuance several months later.

This patient's several-week course illustrates many features of the variable, and often misleading, presentation of this easily overlooked illness. The prodromal fever, myalgias, and malaise are typical of a viremic illness, and precede the thyroiditis by two to three weeks. The moderate thyroid enlargement is usually asymmetric and firm, suggesting possible malignancy, but the sudden onset of marked focal tenderness, which may be accompanied by dysphagia, indicates acute inflammation. The initial disruption of thyroid follicular structure results in the large discharge of thyroid hormone, possibly seen as an early hyperthyroid phase with suppressed TSH and a reduced radioactive iodine uptake (about 1%). The recovery phase may last several months with complete recovery of thyroid funciton in about 90% of the cases, and progression to hypothyroidism in perhaps 10%, probably reflecting a secondary immune process in the genetically susceptible. Response to steroid therapy is rapid and more effective than to anti-inflammatory medication. The epidemiology of subacute thyroiditis shows greater frequency in the 20 to 50-year age group, with a female-to-male ratio of about five, and in the past, greater incidence in North America and Scandinavia. The appearance of recent reports may reflect greater awareness as well as geographically shifting viral outbreaks.

Herbert S. Hoffman, M.D.

West Hartford

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National HIV Telephone Consultation Service

The National HIV Telephone Consulation Service, "Warmline" (800-933-3414) based at San Francisco General Hospital provides free HIV clinical information and case consultation to health care providers. The Warmline faculty includes physicians, clinical pharmacists, and nurse practitioners who have extensive experience treating patients with HIV disease. Warmline consultants are available to answer questions between 7:30 A.M. and 5:00 P.M. PST. A 24 hour voice mail system is available at other times.

The Warmline is funded by the Health Resources and Services Administration, the AIDS Education and Training Centers, and the American Academy of Family Physicians.

Legal Defense Fund for Physicians Established

FARFEP (First Amendment Rights Fund for Every Physician) was established in 1994 after an emergency physician was sued for libel and slander by a large corporation for writing an editorial about the entrance of big business into emergency medicine. The fund was established to help any physician who is sued for writing or speaking on any medical issue. FARFEP is a 501(c)3, tax-deductible First Amendment fund created to allow an individual physician to speak the truth about the "business" of medicine without fear of being crushed by the expenses of a meritless lawsuit, as well as to educate the public. Our first beneficiary had a vigorous battle, but he prevailed with the assistance of FARFEP. The fund is ready and willing to assist in the defense of any physician to protect his or her First Amendment Rights. Contributions and inquiries can be sent to: FARFEP, PO Box 1968, Santa Fe, NM 87504.

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Report of the Committee on Legislation to the House of Delegates
8 May 1996

DAVID W. PARKE, M.D., Chairman

IN addition to the brief report of our committee on page 48 of the handbook of the CSMS annual meeting there is a legislative update in front of you with details of the fate and status of the numerous bills which we have supported or monitored during the legislative session. At this time I would like to take a few minutes to discuss several key aspects of our involvement in the legislative process.

Health care is one of the biggest issues in this country today. Every legislator is involved in making decisions about health care at some level. Every person—every physician—will be directly affected by the results of legislation. Too few of us make the effort, or take the opportunity, to meet with our legislators to discuss issues that impact on the well-being of the patient-public and on our profession. Until the time comes that many more of us make our views known to our legislators, we have to accept those legislative developments that are not necessarily to our liking.

Legislators sometimes enact laws that are wrong for their constituents. The worst of these laws may be generated by half-truths or outright falsehoods presented to legislators as fact. (Remember that nobody takes an oath when presenting views to a legislator or when giving testimony to a legislative committee.) Distorted notions are sometimes presented by those interested solely in personal gain or self aggrandizement. And these individuals or groups can find lobbyists to act as panderers for their causes.

Legislators are motivated by the desire to serve. They enjoy having status and power and anything that is ego building. Thus direct association with community and professional leaders is very important to legislators. And don't forget that on a one-to-one basis most legislators hold physicians in high esteem. The problem is—and I've heard it repeatedly from legislators this year —they don't hear much from physicians, and then usually at the height and in the heat of the busy legislative session.

I'm very grateful to those physicians who helped us in the legislative session and who heeded our legislative alerts. Now I would encourage greater involvement and timely involvement. "Timely" this year is from now until election day, and then between the elections and the opening of the full legislative session next year. Your help, both personal and financial, counts more during campaign time and the postelection hiatus than after the legislative session begins. As had already been noted COMPAC contributions plus personal involvement can help immensely to open doors so that our views may be heard at the most opportune time.

During the hectic legislative session that ends at midnight tonight, representatives of the CSMS have worked long and hard to keep up with the often disorderly, compulsive, and agitated activity that has characterized this legislature's behavior. It is difficult to stand by while some legislators fail to enact legislation that is widely supported by other legislators and their constituents, purely out of political pique.

We should be very proud and grateful for the countless hours our president, Dr. Hollister, and our president-elect, Dr. Deren, and other concerned physicians put into the process in person at the Capitol and by phone with key legislators, bureaucrats, and members of the executive team. We should be equally proud and grateful to our hard-working lobbyists, and our own Mag Morelli. Some county legislative committees and executive directors have worked

NOTE: Written comments submitted after June deadline.

very closely with us and have spent many hours affecting legislation that has been of most concern to physicians and their patients. We have nurtured and found many dedicated allies in both houses of the legislature and are appreciative of their concern for the welfare of the public's health interests.

Several key problems and legislative bills that faced us deserve special mention:

First of all, I've heard much discussion about "Any Qualified Provider." As you know, last year an AQP bill sponsored by CSMS and a coalition of allied health-care providers failed on a tie vote in the Public Health Committee. Further attempts at pursuing AQP amendments to other bills failed because of opposition on the part of House leadership.

Last year the Council, as directed by this House of Delegates, asked us to pursue AQP legislation again in this session. Before the session started we were told by House leadership—in no uncertain terms—that if the CSMS asked that an AQP bill be raised by a legislative committee, it would not get out of committee. And furthermore we were told that any bill onto which we attempted to tack an AQP amendment would also be killed. Senate leadership also opposed AQP as did the governor. Thus, after due consideration of the facts of life in the legislative arena, we decided that it would be political folly for us to insist on an AQP bill and so notified the Council. We also agreed to remain part of the coalition to support AQP should it emerge otherwise. Senator Prague did in fact raise an AQP bill in committee, and as promised by the House leadership, it died.

The legislative committee's decision should not be construed as weakness on our part regarding the desirability or value of AQP legislation to the members of this society, but rather as recognition of the political reality that we might destroy our effectiveness on other important issues such as the Patient Protection Act, which had already engendered interest among some legislators.

As you know the Patient Protection Act became swallowed up in separate House and Senate bills on managed-care regulation. We became heavily involved in shepherding the managed-care bills. The House bill which embodied most of our objectives of the Patient Protection Act—and, in reality was almost too good to be true—passed the House by a very wide margin, but was rejected by the Senate on Monday just three days before the session is scheduled to end. The rejection was in the form of referring the bill back to the Insurance Committee. The Senate version of managed care, revised and considerably weaker than the House bill, passed the Senate on Monday. It is now in the House where, we hope, it will pass today. We have told House leadership, who sought our advice, that we would rather have the Senate bill pass and not risk having nothing at all that would place some control over the managed-care industry.

On Monday, before the Senate votes were taken, Drs. Hollister, Deren, Gerber, Tim Norbeck, Mag Morelli, our lobbyists and I discussed managed care with a number of senators including the chairman of the Insurance Committee. He felt that we should be content with what his Senate bill gave us and added that he knew full well that we would be back next year and for years thereafter seeking to strengthen our position on managed-care reform and regulation. I asked him that if he felt that eventually our hopes and wishes would prevail why it was not reasonable to settle the whole issue now, once and for all. He responded that we were working in the political arena not the arena of reason.

And so, in a state where the insurance industry is heavily involved in the political arena and is big enough and wealthy enough to intimidate and otherwise influence many legislators and the executive branch, the Senate bill, if enacted, will be a victory for consumers of health care and physicians in the so-called Insurance Capitol.

Quickly a look at the optometry scope-of-practice bill. The bill that passed the inequitable evaluation of the Public Health Committee and the Senate in almost record time was odious to all of medicine as well as the specialty of ophthalmology. After countless hours of meetings and negotiations under the direction of the House leadership and the House co-chair of the Public Health Committee the Senate bill was greatly and effectively weakened. We had to recognize the fact that optometry had engendered much support in both legislative houses long before the session had begun and that there would be concessions despite our belief that there was no merit to the bill and no public outcry in support of it.

There was tremendous cooperation and dialogue among key legislators, CSMS leadership, members and lobbyists, and ophthalmology's leadership and lobbyists. In the course of events on one day more than 50 ophthalmologists appeared at the Capitol to talk with legislators. On other occasions ophthalmologists and their spouses made important visits to key legislators sharing their knowledge of the vast differences in ophthalmologists' training and capabilities and the limited capabilities of optometrists. The net result was an amended bill that passed both houses and which has greatly defused, for now, optometry's threat to medicine.

Optometrists cannot say that they practice "optometric medicine" nor that they are "optometric physicians." They cannot diagnose nor treat systemic diseases that may affect the eye. They cannot perform surgery and cannot use lasers. They cannot order laboratory tests nor diagnos-

tic imaging. They cannot treat ocular malignancies. They cannot give injections or resort to other invasive procedures (other than to counteract an anaphylactic reaction). On the flip side: they may dispense up to a 72-hour supply of controlled substances. They may treat some types of glaucoma with restrictions including ophthalmological consultation. And they may call themselves practitioners of "advanced optometric care" after completing specified advanced studies.

There is great concern about Medicaid managed care. I sit on the Subcommittee for Access to Medicaid Managed Care and have attended sessions related to the access of Medicaid recipients to dentistry, behavioral problem providers, primary-care providers, and vision-care providers, especially pediatric-care providers in all categories.

There is a well-entrenched bureaucracy in the Department of Health Services, the Department of Children and Families, and other related social services of which representatives are also participants on the subcommittee. These people are dedicated to the preservation of entitlement programs and also recognize that there are many people who are genuinely in need of help. They have put into place a Medicaid managed-care system with 11 managed-care organizations. There is still much confusion within the system and among Medicaid recipients as to when, how, and why to access the system. HCFA's proviso that managed-care clients may change plans monthly is ludicrous and makes it difficult for providers to keep abreast of "who's responsible today."

Managed-care organizations are scrambling among themselves for eligible clients and publicly bad-mouth one another, especially in regard to the quality of their provider panels. Some organizations have incomplete or poorly represented provider networks.

Appropriate financial support allocation for Medicaid managed care has failed to materialize and the outcome of hearings concerning deficiencies in numbers of certain providers indicates that reimbursement rates are too low and that many providers are being asked to give care and at the same time incur financial losses in their practices. The process is slow, but we hope reasonable answers to problems will be forthcoming. At least quality assurance has been addressed since CPRO has been selected for Medicaid managed-care quality review.

Once again I would like to thank all who helped before and during the legislative session. We are especially indebted to Mag Morelli and our lobbyists, Sullivan and LeShane. I have had the pleasure of working with them very closely, observing their anguish at times, and their keen ability to maneuver in the political world. Mostly I respect their commitment to principals and integrity and to the cause of quality medical care and patient protection.

And so I turn to all physicians for greater help this year in the election process, in support of COMPAC, and in personally educating legislators about our concerns for health care and the well-being of our patients.

New Handbook on Child Abuse and Neglect Available

The state Department of Children and Families, in conjunction with the medical community, has produced a handbook for health-care professionals on "Identifying, Reporting, and Managing Suspected Child Abuse and Neglect."

The handbook has been endorsed by the Connecticut Chapters of the American Adcademy of Pediatrics and the American College of Emergency Physicians, the Connecticut State Medical Society and its Orthopedic Section, and the Connecticut Academy of Family Physicians.

The handbook is designed to:

- Help health-care professionals identify the signs, symptoms, and characteristics of child abuse and neglect;
- Outline the reporting requirements and procedures for mandated reporters;
- Recommend ways to manage suspected child abuse or neglect cases, including ordering diagnostic procedures, using the 96-hour hold, collecting evidence, writing a medical affidavit, discussing the situation with the child's parents; and
- Explain the role of the Department of Children and Families when a report of suspected child abuse or neglect is received.

Free copies of the handbook are available by calling the Department of Children and Families' Medical Director's office at (860) 550-6460 or the Public Information office at (860) 566-4396.

At its meeting 16 January 1996 the CSMS Committee on the Medical Aspects of Sports recommended that the Society endorse The Physically Challenged Golf Association (PGGA) in its concept and mission. The following article was written by Mark Jaffee, a former sports reporter with the New Haven Journal-Courier/Register and Meriden Record-Jouranl and is currently a correspondent for The Middletown Press. He resides in Meriden and is a member of the Physically Challenged Golf Association.

The Physically Challenged Golf Association

"There's not much I haven't attempted to do in this life. I don't run very fast, but I try."—Wethersfield's Tom Stevens.

As a young, avid golfer, Tom Stevens couldn't wait to get to the golf course. "The last time I broke 80, I think I was 17 years old," recalled the now 55-year-old Stevens.

He feels he is on the verge of accomplishing that feat. Stevens had not known anyone or even heard of anyone attempting to play golf who had lost a limb. So when he lost his right leg, just below the knee, in an automobile accident in the service some 30 years ago, he figured his golfing days were a fading memory.

" I had no idea on whether I could do it nor not," Stevens recalled. "About eight to 10 years went by and one day my father and I went to the Goodwin public course in Hartford and after that round of golf, I had absolutely no doubts. I shot a 54 or 55 for nine holes and I realized it wasn't so bad. After that day, I had no doubts about whether I could play."

Stevens admits there are days when he feels soreness, but that's normal. He uses a prosthesis, and he says, "prothesises are more user-friendly now than in the past."

Stevens, a right-handed golfer, plays twice a week. In 15 rounds of golf last summer, he averaged between 80 and 86. "I hope to break 80 this year," said Stevens who is a member of the Physically Challenged Golf Association based in East Berlin, Connecticut.

"I'm a lousy putter," Steven said. "If I could putt well, I'd be dangerous, I could probably win some tournaments. Putting is all confidence, and it's something that I'll just keep working at."

Stevens likes the idea of the year-old golf association, designed to improve the quality of life for its members afflicted with a variety of physical disabilities.

"I expect to get more involved in the organization and give something back," Stevens said. "If I can help other people, that is something that I would like to do."

Stevens goes by a simple philosphy: "We are only limited by ourselves. I enjoy life. It's a pleasure to be alive."

Naugatuck's Pat Rossi feels the same way. The soon-to-be 55-year-old (on 4 June) became legally blind in her early 20s due to a genetic disease.

"I had 20-20 vision and then one day I woke up and I had only 20% vision," Rossi said. "I can see someone nose-to-nose. I can't gauge distances."

Yet over the years, Rossi's desire to perform routine tasks has not been deterred. She even goes sailing and in the last few years, began to take up golf.

"I don't like the word handicap because I feel I can do anything any (so-called) healthy person can do," Rossi said. "When I was younger, I didn't play sports, but now I would love to be able to play in a golf tournament and even win it. To me, it's the process of doing something. It can be frustrating when you set your own personal goals and don't attain them."

"To me, being outside on the golf course is a way of healing," Rossi said. "I love the ocean but golf is my passion, my baby. Many of her friends, nongolfers, gave her an assortment of golf attire for Christmas in 1995.

Scott Learned, an eight-year golfing professional who runs the Connecticut School of Golf in Torrington, has been working with Rossi and believes she can compete in a tournament in the near future. Learned has worked with many blind golfers and other people with various physical limitations; he believes anyone with the right attitude can play golf. "People need to realize the simplicity of the game. You can hit the ball 50 yards straight ahead and get onto the green in five or six shots."

Learned, who grew up in Meriden near the Hunter Memorial Golf Course, was attending the Greater Hartford Open in the late 1970s, when he saw a blind actor, Tom Sullivan, dazzle the 18,000 person gallery at the 18th hole during the Pro-Am event.

"Tom holed a shot out of the bunker from about 35 yards, and the crowd was estatic," Learned recalled. "It wasn't an easy shot for anyone and it was absolutely beyond my comprehension. I was working at the GHO in media relations and I had the pleasure of bringing him down to the press tent. It peaked my interest in working with the blind and teaching them how to play the game."

When Learned teaches people with no obvious limitations, he occasionally will have them close their eyes. "It astounds people when they are able to hit the ball," he said.

Pat Rossi, the vice president for the Waterbury chapter of the National Federation for the Blind, was adamant about a day on the fairways.

"I'm not looking for someone to carry my golf bag," she said, "rather as a guide and to help me keep score."

"I get anxious when I tee off, especially when I hear, 'oh, she is blind,' I get a little nervous," Rossi said. "I know golf etiquette. I wouldn't hold up anyone from playing. I started to change my way of thinking. I can't let the frustration of those type of incidents affect me and take away from what I'm trying to accomplish." Her chipping game is her favorite part of her game.

But to Middletown's Stanley Baldyga, the entire repertoire of shots is enjoyable. In 1989, the Middletown native and 25-year veteran of the Middletown Fire Department was involved in an accident battling a fire. The extent of injuries he sustained was numerous. From 1989-91, he had four cervical operations to repair severed discs in his neck. He had had surgical procedures on his lower back before the 1989 injuries. His left and right arm mobility, strength, and range of motion are limited.

"To me, a day of golfing is completely relaxing," said Baldyga, now 55 years old. "I wasn't into golf when I was younger, but about 10 years ago, one of the lieutenants was going out to play and a bunch of us said, great, let's go. It was always a great time.

"It was easy for me to play then because when we were away from the fire house, we didn't talk about work," Baldyga said. "All we talked about was golf. We laughed and joked and had a good time."

And while his play, and especially his swing, has certainly been affected by his injuries, that has not deterred him to continue in his quest.

"I love the game so much; I just want to hit the ball and I really don't care where it goes," Baldyga said.

One of Baldyga's best friends on the course is a specially-designed long-handled putter, so he doesn't have to bend over with a regular putter.

"I still have a slice on my tee shots," he said. "I'm not able to lift the club all of the way back. But I'll keep practicing. One way or another, I'll try and defeat that."

Indian Springs Golf Course professional Rich Broderick was a volunteer with the Special Olympics last sumer during the World Games in New Haven, and in recent years, he has worked with several golfers who have overcome a variety of ailments and obstacles.

"It has made me a better teaching pro," Broderick said. "It's very challenging because the basic standards for most people you just have to throw out the window. You have to find what works for the individual. A lot of it is self-motivation from the golfer."

And Broderick has noticed a definite difference between the physically challenged and others more fortunate.

"The physically-challenged golfer is playing for the pure enjoyment, unlike (some) golfers, who if they miss a shot, they consider themselves a bad person and may throw a club" added Broderick, who has been the head pro at the Middlefield course for six years. "The physically challenged golfer is out there simply for the fun of it."

David Hill, Sr., a former radio program director in Burlington, Vermont, was afflicted with multiple sclerosis 20 years ago and is bedridden and wheelchair-bound. While he had not been an avid golfer in his early years, he noticed that there were no wheel-chairs lined up at the galleries at PGA events when he would watch them on television.

"I've been lying in bed the past few years and I tried to think about positive things rather than negative things, so I designed a golf course, specifically-designed for people who are physically challenged," said Hill, 59.

The 9-hole, par-27 course is entirely flat. The greens would be made of astro-turf so wheelchairs would not affect the surface like they would grass.

"I still don't have the desire to play, but if it can give a little bit of satisfaction to someone, than it is worth it," Hill said. He sold the patent to the project and funding for the construction is being raised.

The Physically Challenged Golf Association was established in June 1995 by Kathleen Hickey Kane (a physical therapist and athletic trainer of Valley Physical Therapy in Cromwell) and Brian Magna (the director of Sports Medicine Associates in Avon).

At a clinic at the Tournament Players Club at River Highlands in Cromwell last fall, there were stroke survivors, burn victims, amputees, people with various forms of cerebral palsy and forms of paralysis, blind, and wheelchair-bound people. People came from 28 cities and towns in Connecticut and from as far as Syracuse, New York.

It is the hope of Kane and Magna for the association to become a nonprofit organization in the near future. They have already received endorsements from the Connecticut State Medical Society's Committee on Sports Medicine, the Connecticut Professional Golf Association, and the New York/Metro PGA.

There was a clinic on 20 July at the Bel Compo Golf Club in Avon. On 3 August there will be a clinic at the TPC at River Highlands from 1 P.M. to 4 P.M. Please contact TOC PGA pro Jeff Krohn at (860) 828-6303.

Mark Jaffee
Meriden

IN MEMORIAM

BRUBAKER, ROBERT E., University of Pennsylvania School of Medicine, 1936. Dr. Brubaker was the former physician at Winchester Repeating Arms in New Haven. He was a member of the New London County Medical Association, the Connecticut State Medical Society, where he served on the Committee on Occupational Health from 1971 to 1974, and the American Medical Association. Dr. Brubaker died 22 May 1996 at the age of 85.

HANSEN, RAOUL M., University of Iowa College of Medicine, 1953. Dr. Hansen was employed by National Medical Research of Hartford. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Hansen died 29 May 1996 at the age of 69.

KING, STEWART A., Columbia University College of Physicians and Surgeons, 1947. Dr. King began his general surgery practice in Stamford in 1956. He was associate surgeon-in-chief, president of the medical staff, and chairman of the surgical review committee at Stamford Hospital. In 1995, Dr. King was named as the first recipient of Stamford Hospital's Centennial Award, awarded to "a few living individuals, active organizations or corporations that have brought distinction to Stamford Hospital." Dr. King was a member and past president of the Stamford Medical Society, a member of the Fairfield County Medical Association where he served as president from 1971 to 1972, the Connecticut State Medical Society, where he scrved on numerous committees from 1964 to 1983, and the American Medical Association. Dr. King died 25 May 1996 at the age of 72.

MATTHEWS, LESTER G., College of Medicine and Dentistry of New Jersey-New Jersey Medical School, 1963. Dr. Matthews practiced psychiatry and specialized in geriatric psychiatry. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society where he served on the Medical Aspects of Sports Committee from 1981 to 1982, and the American Medical Association. Dr. Matthews died 21 June 1995 at the age of 64.

MORSE, WILLARD J., University of Vermont College of Medicine, 1931. Dr. Morse practiced obstetrics in New London for 40 years and was former chief of obstetrics and chief of gynecology at Lawrence and Memorial Hospital. He was a member and former president of the New London County Medical Association, and a member of the Connecticut State Medical Society. Dr. Morse died 23 April 1996 at the age of 92.

O'CONNELL, ENOS J., Tufts University School of Medicine, 1934. Dr. O'Connell practiced general medicine in Unionville for 36 years. He was a member of the Hartford County Medical Association, where he served as an alternate delegate to the Connecticut State Medical Society during the 1960s, and the Connecticut State Medical Society where he served on the Committee on Rural Health and the Committee to Study Perinatal Morbidity and Mortality during the 1960s. Dr. O'Connell died 9 June 1996 at the age of 86.

OH, ILLSUK, College of Medicine of Seoul National University, South Korea, 1971. Dr. Oh maintained a private obstetrics and gynecology practice in Manchester and had been a member of the medical staff of Manchester Memorial Hospital since 1978. He previously served as Chairman of the Department of Obstetrics and Gynecology at Manchester Memorial Hospital. Dr. Oh was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Oh died 8 May 1996 at the age of 49.

SAUNDERS, WILLIAM L., University of Rochester School of Medicine and Dentistry, 1949. Dr. Saunders was in private practice in West Hartford and served on the medical staff of Hartford Hospital for 40 years, retiring in 1994. From 1972, he served as assistant Medical Director, then was appointed Medical Director at the Farmington Convalescent Home. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Saunders died 12 June 1996 at the age of 72.

SHAH NIEZRECKI, URMILA C., Grant Medical College Bombay University, India, 1951. Dr. Shah Niezrecki practiced obstetrics and gynecology in Bridgeport for many years. She was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Shah Niezrecki died 20 March 1996 at the age of 71.

CORRECTIONS

In my May "Reflections" I noted that both William Carlos Williams and Gertrude Stein were physicians. A week or so later Sherwin Nuland, during a conversation said, "For once I gotcha," or something to that effect. "Gertrude Stein was never an M.D!" He was absolutely right. Although she completed medical school at Johns Hopkins, and the "big men like Halstead, Osler etcetera ... passed her.... there were others who were not so amiable.... that was the end of the medical education of Gertrude Stein." She never graduated. (From, *The Autobiography of Alice B. Toklas,* New York: The Literary Guild. 1933: 101-2.)

Robert U. Massey, M.D., *Editor*

The May "Drug Information Update: Hartford Hospital" article entitled *Losatan (Cozaar®)*, by Sandra L. Baldinger, Pharm.D. contained typographic errors. The corrections are: Table 1–Losartan, Enalapril; Table 2–11.4/8.6, 11.9/10.6; Table 3–Mean arterial pressure; Table 5–Benazepril (Lotensin®), Losartan (Cozaar®).

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

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Currently seeking full-time/part-time (IM/FP) BC/BE physician with focus on women's issues to join a multi-service medical facility providing outpatient preventive medicine and primary care exclusively to women. The medical practice consists of two full-time primary care physicians, an allergy and asthma specialist, an adolescent medicine specialist, a nurse practitioner in adult medicine and gynecology, a nutritionist with individual weight loss and cholesterol reduction programs, three psychotherapists, ACR accredited mammography, ultrasound, massage therapy, and adjoining laboratory. Women's Care is proud of its comprehensive approach to medical care and health care maintenance and welcomes you to join our team of health care professionals committed to women's issues and education. For more information, contact: Caryn Nesbitt, M.D., Medical Director, 85 Poheganut Dr., Groton, CT 06340, (203) 448-6303.

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Charming family practice office/home located in the beautiful New England coastal community of Trumbull, Connecticut. This well established solo practice with over 3,000 patients is in a scenic residential area. The retiring physician is the Chairman of Family Medicine Department and seeking a BC/BE family practitioner who will provide only the highest quality of care to his patients. Picture living in this New England coastal community with abundant recreational activities and excellent schools. Easy access to the local airport and metropolitan amenities. Benefits: call coverage, academic affiliations, and network alliance with Connecticut Health Enterprise. Contact Tammy Pavlock or Barbara Volk at 1-800-521-6780 or send CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

GENERAL PRACTICE

Position available for general practitioner with experience in emergency medicine, orthopedics and minor surgery, for medical center in Westport, Connecticut. Flexible hours, excellent salary and pleasant work environment. Please call or forward CV to: Anthony T. La Marca, M.D., 278 Post Road East, Westport, CT 06880, telephone (203) 454-1043.

INTERNAL MEDICINE

Western Connecticut: An academically oriented primary care practice of several internists which has an integral role in the Yale Primary Care Residency Program seeks a BC internist. Opportunities include an enjoyable practice, a Yale faculty position, working with residents in the office, and partnership. Send CV to CSMS c/o IM/LR.

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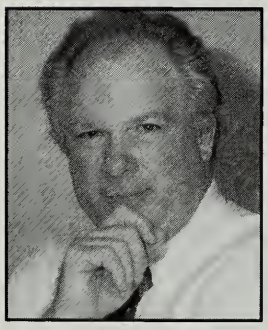

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A Case of Acute Respiratory Failure in Pregnancy

TAPAS BANDYOPADHYAY, M.D. AND PHYLLIS L. SCHATZ, M.D.

ABSTRACT—Influenza is usually a benign, self-limiting illness. Occasionally influenza may be complicated by pneumonia. There is some impairment of cell-mediated immunity in pregnancy so that influenza pneumonia in pregnancy may rapidly progress to acute respiratory failure and other multisystem dysfunction. We present a case of influenza pneumonia in the third trimester of pregnancy in a normal host leading to acute respiratory failure which had a favorable outcome following standard supportive therapy.

Case Report

A 33-year-old white female, gravida 2, para 1 was admitted at 38-weeks gestation with a three-day history of fever, malaise, myalgias, and increasing shortness of breath. She had a nonproductive cough and left-sided pleuritic pain but no hemoptysis. Her past medical history was essentially negative and she was not taking medication. She was a nonsmoker.

When first seen, she had a temperature of 38°C with sinus tachycardia and a respiratory rate of 24 per minute. She appeared toxic and was dyspneic even at rest. Examination of her upper respiratory tract was unremarkable and there were no jugular venous distention, cardiac murmurs, or abnormal heart sounds. Examination of her chest revealed moderately good air exchange and some tubular breath sounds anteriorly on the left. Otherwise her examination was unremarkable.

Abbreviations Used in Text
ABG=arterial blood gas
PEEP=positive end-expiratory pressure

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Arterial blood gas (ABG) on admission showed a pH of 7.44, PO_2 54, PCO_2 26, carbon dioxide content 17.9 mEq/L on room air. Her complete blood count showed a white blood cell count of 13,000/mm^3 with a normal differential. Hemoglobin was 11.4 g/dL with a hematocrit of 34%. Her blood urea nitrogen, creatinine, liver function tests, serum amylase, prothrombin time, and partial-thromboplastin time were normal. Her chest roentgenogram showed a left upper lobe infiltrate with air bronchograms and a subtle infiltrate in the right lower lobe[Fig. 1].

She was admitted with a diagnosis of community acquired pneumonia in a normal host. Virus, mycoplasma, legionella, and *St. pneumoniae* were considered as the possible etiological agents. She was treated with intravenous cefuroxime 750 mg every 8 h, erythromycin 1 g every 8 h, and amantidine hydrochloride 100 mg twice daily. A high fractional inspired oxygen percentage was needed to achieve adequate oxygenation.

Within 24 hours of admission the patient's condition deteriorated markedly with increasing shortness of breath and fatigue. She was hypoxic even on 70% oxygen through a high flow oxygen mask and serial arterial blood gas determination showed her to be in refractory hypoxemic failure. Repeat chest roentgenogram showed a progressive increase in infiltrates bilaterally [Fig. 2].

The patient was transferred to the intensive care unit, intubated, and placed on respirator support. She initially required fractional inspired oxygen of 90% with a positive end-expiratory pressure (PEEP) setting of 8cm of water. The fetus was monitored and remained stable except for

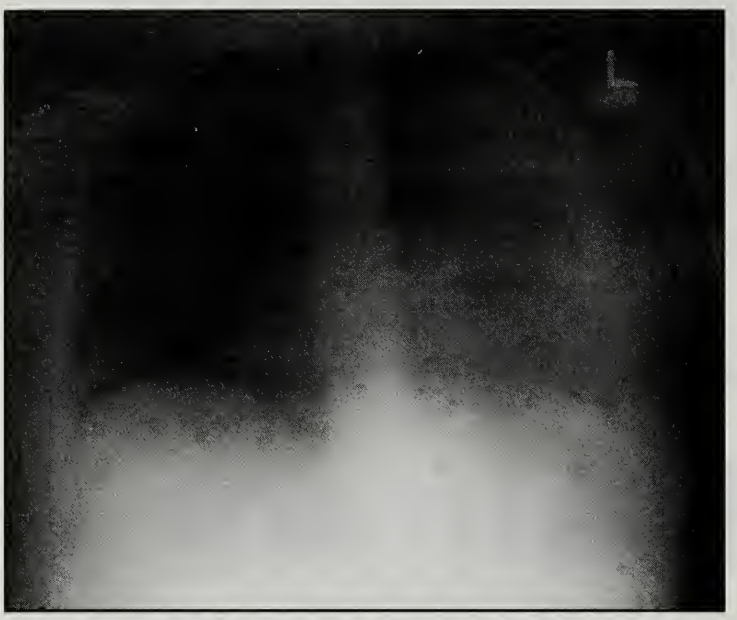

Figure 1.—Chest film on admission showing large left-sided infiltrate with air bronchograms and right mid- and lower-lobe infiltrates.

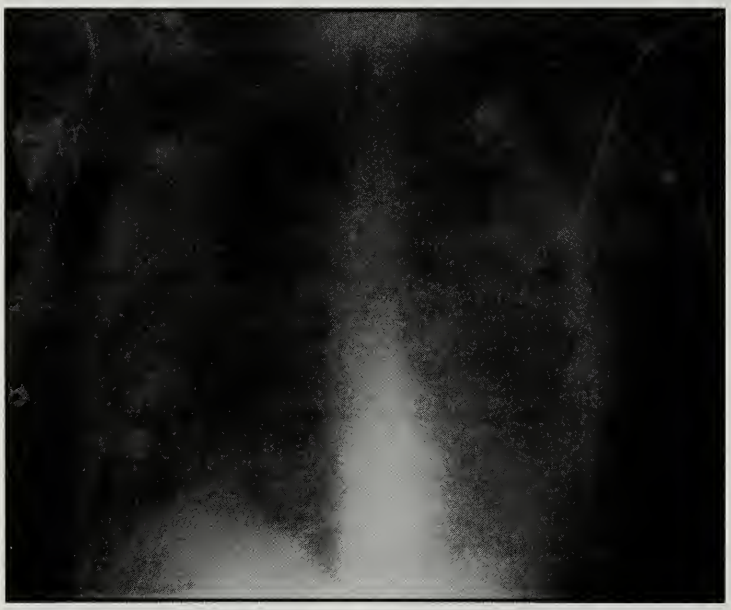

Figure 2.—Chest fim after transfer to medical ICU showing rapid progression, development of diffuse lung lesion with relative sparing of costrophenic angles.

brief periods of tachycardia. The patient's sputum, obtained from suctioning of the endotracheal tube, showed more than 25 white blood cells per high power field but no organisms. Cultures of blood and sputum were negative. Her fluid and electrolyte status was closely monitored. She was in markedly positive fluid balance and responded well to small doses of diuretics. An echocardiogram showed normal cardiac function. Placement of a Swan-Ganz catheter was considered but deferred because of the patient's wishes.

The patient went into labor on day three of ventilatory support and she delivered a healthy baby girl weighing 2600g with an Apgar score of 9 and 9. Labor was precipitate but there were no injuries except a cervical laceration which required operative repair. After delivery, the patient's condition showed a steady improvement. She required mechanical ventilation but her fractional inspired oxygen could be gradually reduced and she was successfully extubated after five days.

Serological tests for adenovirus, measles, parainfluenza, influenza B, respiratory syncytial virus, varicella, and mumps were negative as were legionella, mycoplasma, chlamydia, and herpes. However, results showed a greater than fourfold rise in titer of antibodies to influenza A serotype H3N2 consistent with a recent infection with that strain of influenza virus.

The patient's chest examination and arterial oxygen levels continued to improve, and repeat chest roentgenograms showed a progressive clearing of the infiltrates. She was discharged home with her baby on day 12 of hospitalization. Her discharge diagnosis was acute respiratory failure due to influenza pneumonia.

Discussion

Pregnancy is a unique physiological state. There are well-documented alterations in cell-mediated immune function that predispose pregnant patients to more severe viral infections.[1] Pregnant patients seem to be at higher risk of complicated influenza infections than others in the population.[2] There is scant literature on influenza pneumonia in pregnancy. Pregnancy was strongly associated with increased mortality from influenza during the worldwide pandemic years of 1918-19 and during the 1957-58 Asian influenza pandemic.[3]

Alterations in cardiorespiratory function in pregnancy include a reduced residual lung volume due to a reduced vertical chest diameter resulting from the rise of the diaphragm, and increased oxygen consumption by as much as 15% to 25%, especially in the third trimester. Owing to this, any pneumonia in pregnancy causing an appreciable decrease in ventilatory capacity is tolerated less well than in the nongravid state.[4] The functional residual capacity is decreased by an average of 18% in the third trimester. Termination of pregnancy results in reversal of this component of hypoxemia.[5] The physiological anemia of pregnancy also contributes to hypoxemia. Pneumonia in pregnancy is a leading cause of nonobstetric maternal death and is also one of the commonest causes of the acute respiratory distress syndrome in pregnancy.[6,7]

Our patient developed acute respiratory failure due to influenza pneumonia in the third trimester of an otherwise uncomplicated pregnancy. In the absence of an etiologic agent in the acute phase of her

illness, she was empirically treated with amantadine hydrochloride, antibiotics, and supportive measures. There are case reports of a favorable outcome if such patients are treated early in the course of their disease with amantadine and ribavirin.[4] Our patient had some of the features of the adult respiratory distress syndrome and was managed as such in the absence of Swan-Ganz data to confirm this complication. Fluid balance was a particular challenge because of the gravid state and possible capillary-leak syndrome. There are conflicting data as to whether expeditious delivery of the fetus improves maternal outcome.[8] Our patient however made a remarkable recovery after her spontaneous delivery. As presently recommended by the Centers for Disease Control, pregnant women are not considered a high-risk target group to receive influenza immunization in the absence of other chronic illnesses.[9] Amantadine has, however, been considered for high-risk pregnant women infected with the influenza virus.[10] It would appear prudent to treat pregnant women with pneumonia aggressively with currently available therapies and to have a high index of suspicion for influenza pneumonia especially in the appropriate season.

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Mitral Valve Repair for Mitral Regurgitation Utilizing Intraoperative Transesophageal Echocardiography—Late Results

SURENDRA K. CHAWLA, M.D., JOSE MISSRI, M.D., AND RICHARD WESSEL, M.D.

ABSTRACT—Ninety consecutive patients underwent mitral valve repair for mitral regurgitation (MR) utilizing intraoperative transesophageal echocardiography (TEE). Fifty-nine males and 31 females between the ages of 31 and 88 with a mean age of 67.9 years were evaluated. Preoperative TEE demonstrated pathology involving the posterior leaflet in 28 patients, anterior leaflet in 21 patients, both leaflets in 19 patients, annular dilatation in 19 patients, and restricted leaflet in three patients.

Surgical procedures attempted included quadrangle resection of posterior leaflet pathology (40), Duran "flip over" operation (13), or Goretex suture for anterior leaflet pathology (20), and ring alone for central/ischemic mitral regurgitation (20). TEE immediately following repair showed either no regurgitation or a trace in 78 patients (86%).

Time elapsed since repair ranged from one month to 55 months, with a mean of 29 months. Long-range evaluation of mitral valve competence was done by clinical examination and transthoracic or transesophageal echocardiography. Three patients died postoperatively.

Fifty-six of 87 patients (64%) had either no or trivial MR within the first year of follow-up. Ring alone for annular dilatation and Goretex suture for anterior leaflet prolapse had the highest incidence of progression of MR.

Among the 65 patients followed over one year, 42 (64%) continue to have either none or trivial MR. Three patients had worsening MR requiring mitral valve replacement.

Quadrangle resection for posterior leaflet repair and Duran "flip over" operation for anterior leaflet pathology had the highest success rate in long-term follow-up.

Abbreviations Used in Text

MR=mitral regurgitation

TEE=transesophageal echocardiography

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Introduction

INTRAOPERATIVE TEE has become a standard procedure for patients undergoing mitral valve repair for mitral regurgitation (MR) to identify the mechanism of MR, in planning corrective surgical procedures and to evaluate the repair prior to decannulation. The purpose of this study is to assess the long-term results of various types of surgical procedures employed to repair mitral regurgitation.

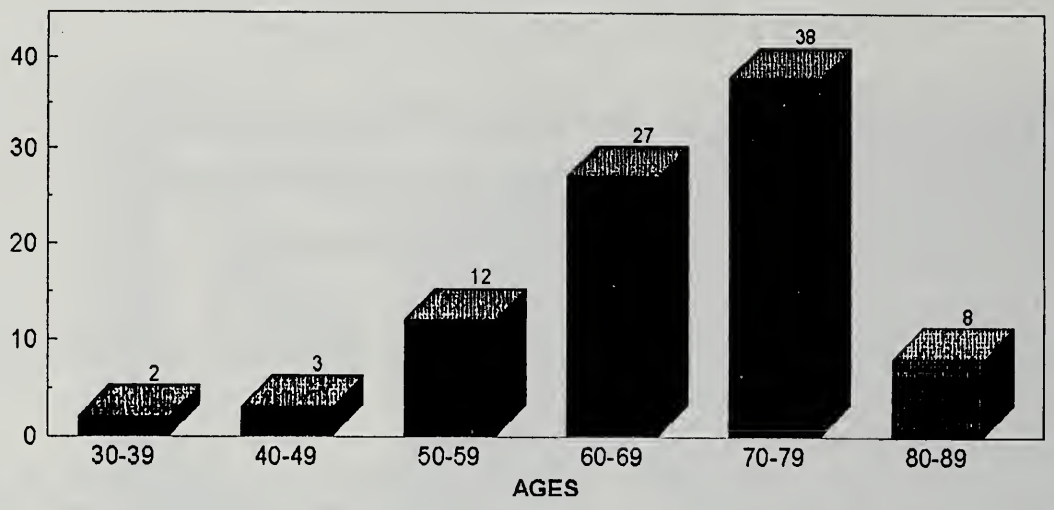
Material and Method

Table 1 summarizes the demography of this group of patients.

All patients had right and left venticular cardiac catheterization and coronary angiography. Associated pathology included coronary artery disease in 47 patients, aortic valve disease in nine, chronic ascending aortic dissection, patent foramen ovale, and tricuspid regurgitation in the remaining three patients.

Table 1.—Mitral Regurgitation

- ▶ Total patiens = 90
- ▶ Sex: Males—59, Females—31
- ▶ Ages: 31 to 88 years (average 67.9 years)



Intraoperative Transesophageal Echocardiography.—Following induction of general anesthesia and endotracheal intubation, TEE was performed using the Hewlett-Packard imaging system and a 5 MHz transesophageal transducer. Biplane imaging was obtained in the transverse and longitudinal axis planes. Color flow Doppler imaging was obtained to assess the severity of mitral regurgitation.

Imaging was performed immediately before and after cardiopulmonary bypass but prior to decannulation. The esophageal probe was left in place during the cardiac surgical procedure. A systolic blood pressure greater than 100 mm of Hg was considered a minimal requirement for the postoperative assessment of MR, to assess the adequacy of repair, and to detect associated complications.

Results

Prebypass Evaluation.—Table 2 summarizes the intraoperative TEE finding.

Surgical Treatment.—Based on intraoperative TEE findings, 114 surgical procedures were performed in 90 patients. Table 3 summarizes these surgical procedures.

Several patients required multiple procedures because of the pathology identified, especially anterior leaflet pathology.

Table 4 summarizes concomitant surgical procedures. Primary or redo coronary artery bypass grafting was accomplished in the majority of patients with an average of 2.8 grafts per patient.

Postbypass Evaluation—Table 5 summarizes the immediate postoperative results. Following mitral valve repair 86% of the patients showed either none or trivial regurgitation.

Long-term Follow-up—Three patients (3.3%) died 10, 20, and 60 days postoperatively from low cardiac output and multisystem failure.

Table 2.—Mitral Regurgitation

Mitral Valve Pathology—Intraoperative TEE	
Posterior leaflet/ruptured chordae	28
Anterior leaflet—elongated/ruptured	21
Bileaflet—ruptured/elongated	19
Annular dilation	19
Restrictive	3
	90

Table 3.—Mitral Regurgitation

Surgical Procedures Attempted	
Quadrangle resection posterior leaflet	40
Duran procedure	13
Goretex—artificial chordae	20
Chordal transfer	20
Ring alone	20
Miscellaneous	
release chordae	3
excision chordae	2
chordal shortening	1
cleft closure	1
plication posterior leaflet	1
	114

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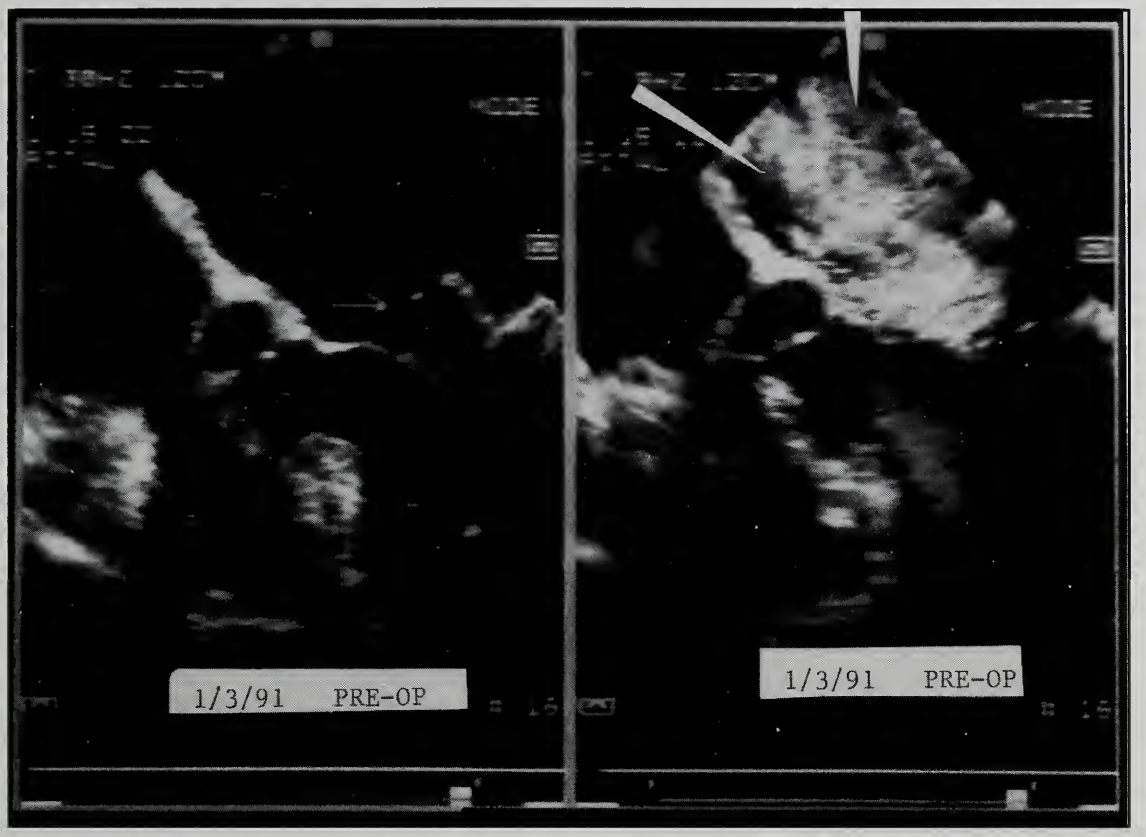

Figure 1.—Panel A: Preoperative TEE demonstrating prolapsed posterior leaflet of the mitral valve (arrow). Panel B: Preoperative TEE—Echo color Doppler flow showing significant mitral regurgitation (between arrows).

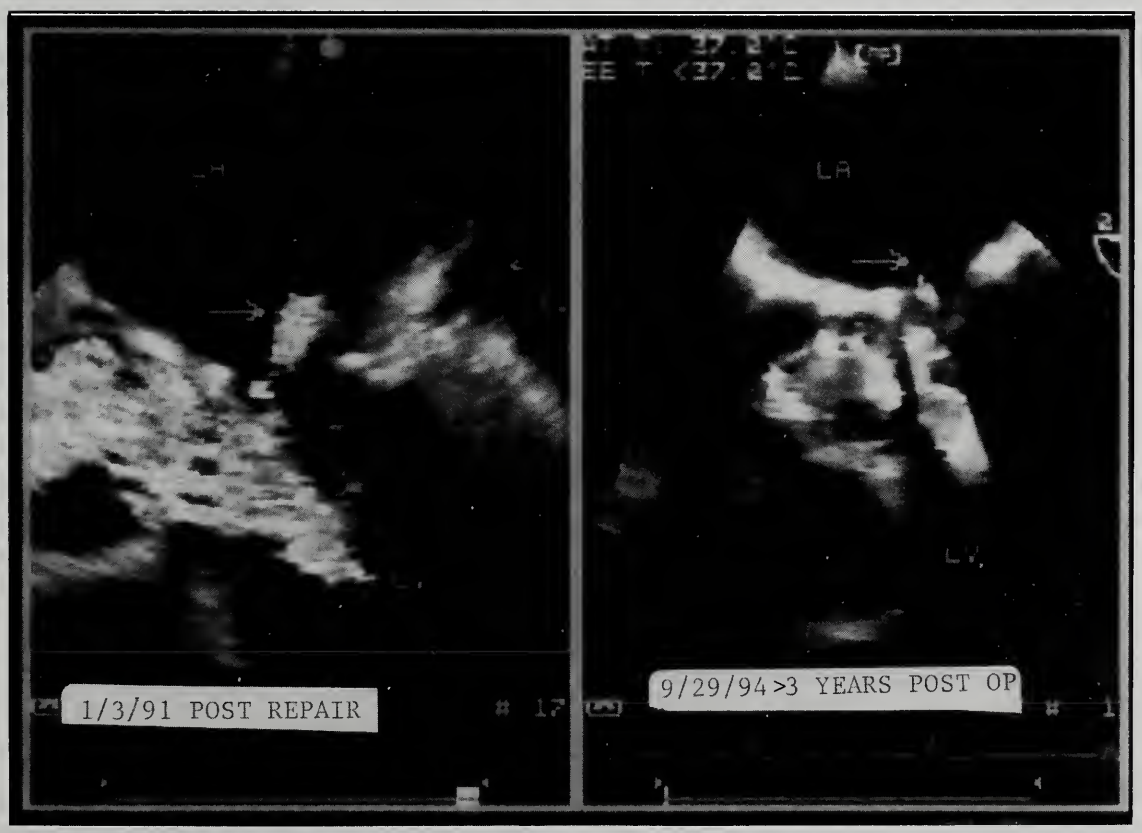

Figure 2.—Panel C: Immediately post repair—(quadrangle resection posterior leaflet and chordal transfer from posterior to anterior leaflet) showing trivial mitral regurgitation. Panel D: Forty-four months postoperative TEE demonstrating no mitral regurgitation.

Table 4.—Mitral Regurgitation	
Associated Procedures	
Coronary artery bypass graft*	47
Aortic valve replacement	9
Miscellaneous	
aortic valve repair	1
ascending aortic graft	1
tricuspid valve repair	1
closure patent foramen ovale	1
	60
*Average bypass per patient is 2.8 grafts	

Table 5.—Immediate Postoperative Results	
None to trivial mitral regurgitation	78 (86%)
Mild mitral regurgitation	9
Not recorded	3
	90

Table 6.—Long-term Results Less Than One Year	
None to trivial mitral regurgitation	56 (64%)
Persistent minimal mitral regurgitation	9
Persistent moderate mitral regurgitation	4
Lost to follow-up	5
Late death	3
	87

Table 7.—Late Results Greater Than One Year	
None to trivial mitral regurgitation	42 (64%)
Persistent minimal mitral regurgitation	13
Persistent moderate mitral regurgitation	6
Late death	4
	65

The follow-up ranged from one to 55 (mean 29) months. There were 12 late deaths (13%); one resulted from a ruptured aneurysm, one from arrhythmias, and one from pneumonia; the remaining deaths occurred in nursing homes and were of unknown cause.

Three patients required mitral valve replacement four months, 23 months, and 26 months postoperatively following mitral valve repair. Operative findings included a destroyed leaflet, retraction of both leaflets (one), and perforated repair of the posterior leaflet with dehiscence of the ring (one). In three patients there was regression of MR during the follow-up period.

Long-term follow-up in the remaining 87 patients consisted of clinical evaluation including a physical examination, office notes from referring physicians, and transthoracic and transesophageal echocardiography.

Table 6 summarizes the long-term results within the first year with 64% of patients having either none or trivial regurgitation.

Table 7 summarizes the long-term results (greater than one year) in 65 patients. Sixty-four percent of those patients had none to trivial regurgitation. Figure 1 shows TEE preoperatively (Panel A and B), intraoperatively (Panel C), and 44 months postoperatively (Panel D) indicating stable repair.

Table 8 summarizes the pathology and the procedure performed in 15 patients who had progression of MR within the first year of follow-up.

Table 9 summarizes the pathology and the procedure performed in nine patients with further progression of MR beyond the first year after the repair.

Discussion

Surgical reconstruction for mitral regurgitation offers significant advantages over mitral valve replacement in lower postoperative morbidity and mortality,[1,2] improved long-term results[3], and preservation of left ventricular function.[4]

Traditional methods for evaluating the results of mitral valve repair include assessment of left ventricular distention in the cardioplegic heart, the presence of a V-wave on the left atrial tracing after bypass, or a thrill over the left atrium. In spite of these methods there was residual MR in 40% of patients.[3] Residual MR after repair has been known to be an important predictor of survival—more important than age and left ventricular function.[5]

Since the introduction of TEE in 1971[6] and its clinical applications,[7] this modality has become the diagnostic standard for all patients undergoing mitral valve repair.

Table 8.—Late Progression Regurgitation Less Than One Year		
Pathology	Procedure Performed	
Annular dilation	Ring alone	8
Prolapse anterior leaflet	Goretex—artificial chordae/chordal transfer	5
Cleft posterior leaflet	Closure cleft	1
Ruptured chordae posterior leaflet/ elongated anterior leaflet	Quadrangle resection/chordal transfer	1

Table 9.—Late Progression Regurgitation Greater Than One Year		
Pathology	Procedure Performed	
Annular dilation	Ring alone	3
Elongated chordae anterior leaflet	Goretex—artificial chordae	3
Ruptured chordae posterior leaflet	Quadrangle resection	3

Intraoperative TEE provides immediate and complete evaluation of the underlying pathology of mitral regurgitation, demonstrates the results of repair after cardiopulmonary bypass, and aids in the diagnosis of iatrogenic complications, eg, aortic valve regurgitation resulting from mitral valve repair,[8] which may require urgent attention prior to decannulation.

Ideally, all patients should have either no or trivial MR after repair with confirmation by TEE. No patients in our series were left with significant MR. Reoperation for further repair or mitral valve replacement in patients with mild residual MR was not performed because of its high operative risk. The projected benefit would be marginal as a result of prolonged pump run and ischemic time in patients undergoing associated coronary bypass for ischemic cardiomyopathy.

Long-term results were evaluated by follow-up clinical examination for the presence of a cardiac murmur, referring physician follow-up, transthoracic echocardiography, and TEE. Spontaneous regression of the degree of MR in the follow-up period may indicate an underlying process that may follow mitral valve repair, ie, decreasing the end-diastolic volume of the left ventricle, improving the ejection fraction, and better realignment of the chordal-papillary muscle with the mitral valve leaflets.

This report analyzes the causes for progression of MR after initial successful repair. The high incidence of progression of MR was seen in patients with ischemic MR and annular dilatation where a reparative ring alone was utilized. Ischemic MR is difficult to repair in cardioplegic hearts. Scarred papillary muscle may lead to chordal elongation while the paradoxical motion of the scarred myocardium may lead to chordal shortening during systole. The exact location of the culprit lesion may be difficult to identify during surgery, making it difficult to choose the appropriate method of repair.

Repair of a prolapsed anterior leaflet with the newly developed technique of Goretex sutures to create artificial chordae resulted in a high incidence of progression of MR. The proper length of the Goretex sutures may be difficult to gauge in the relaxed heart; however, as the operator's experience with this procedure increases, the success rate should improve.

Long-term follow-up beyond the first year of repair has shown an equal incidence of progression of MR with the use of the ring alone for annular dilatation, Goretex suture for anterior leaflet, and quadrangle resection for ruptured chordae of the posterior leaflet. This finding may be based on the underlying pathology of the mitral valve.

Reoperation for mitral valve repair is uncommon.[9,10] Deloche reported freedom from regurgitation in about 93% after 15 years[11] and David et al reported freedom from regurgitation in about 95% at eight years.[12] In our own series three patients required mitral valve replacement following repair four months, 23 months, and 26 months postoperatively, as a result of failed repair or retracted leaflets.

In summary, mitral valve repair for MR due to degenerative valvular disease can yield excellent long-term results if intraoperative TEE shows pathology in either of the leaflets. Quadrangle resection for posterior leaflet pathology and Duran "flip over" operation[13] for anterior leaflet pathology yielded excellent results. However, when there is a central regurgitation jet secondary to annular dilatation due either to primary or ischemic cardiomyopathy, there is a higher incidence of early and late progression of MR following repair.

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New Handbook on Child Abuse and Neglect Available

The state Department of Children and Families, in conjunction with the medical community, has produced a handbook for health-care professionals on "Identifying, Reporting, and Managing Suspected Child Abuse and Neglect."

The handbook has been endorsed by the Connecticut Chapters of the American Academy of Pediatrics and the American College of Emergency Physicians, the Connecticut State Medical Society and its Orthopedic Section, and the Connecticut Academy of Family Physicians.

The handbook is designed to:

- Help health-care professionals identify the signs, symptoms, and characteristics of child abuse and neglect;
- Outline the reporting requirements and procedures for mandated reporters;
- Recommend ways to manage suspected child abuse or neglect cases, including ordering diagnostic procedures, using the 96-hour hold, collecting evidence, writing a medical affidavit, and discussing the situation with the child's parents; and
- Explain the role of the Department of Children and Families when a report of suspected child abuse or neglect is received.

Free copies of the handbook are available by calling the Department of Children and Families' Medical Director's office at (860) 550-6460 or the Public Information office at (860) 566-4396.

Cisatracurium: A New Nondepolarizing Neuromuscular Blocking Agent

CHRISTY A. OWENS, PHARM.D. AND JAMES BRAKONIECKI, M.D.

CISATRACURIUM besylate (Nimbex®) is the most recent nondepolarizing neuromuscular blocking agent to be released for clinical use. The neuromuscular blockers have historically been used as adjuncts to anesthesias,[1,2] however, the use of these agents in the intensive care unit (ICU) is increasing. Klessig et al found that neuromuscular blocking agents were frequently used in the ICU to facilitate mechanical ventilation in 89% of patients. Other reported indications for use in ventilator dependent ICU patients include: increased intracranial pressure, high oxygen consumption, agitation or combativeness, facilitation of diagnostic procedures or diagnostic tests, and to eliminate shivering.[3,4,5]

Cisatracurium is a neuromuscular blocking agent of intermediate duration of action, which undergoes organ-independent elimination, and possesses a predictable recovery profile as well as a stable hemodynamic profile. The following is a review of the pharmacology, pharmacokinetics, safety profile, and clinical experience associated with cisatracurium.

Pharmacology

Cisatracurium, which constitutes approximately 15% of atracurium, is one of the ten isomers of atracurium besylate (Tracrium®). It is approximately three times more potent than atracurium,[6] possesses an intermediate duration of action, lacks cumulative neuromuscular blocking effects, and has a recovery profile that is independent of dose as well as duration of infusion.[7,8] Cisatracurium has no effect on plasma histamine concentration, flushing, or clinically important cardiovascular effects following rapid injection of doses up to and including eight times the ED_{95} (ED_{95} = effective dose at which a muscle is 95% paralyzed).[9]

Neuromuscular blocking agents have been traditionally classified as either depolarizing or nondepolarizing agents. Depolarizing agents such as succinylcholine, act as agonists at the neuromuscular junction, where they produce a sustained depolarization, resulting in interruption of transmission of the nerve impulse.[4,10] Nondepolarizing agents competitively bind to the nicotinic cholinergic receptors at the postjunctional membrane, which results in blockade of acetylcholine-mediated neurotransmission.[4,10] The nondepolarizing agents may be further subdivided based on chemical structure (steroidal or benzylisoquinolinium compounds) or on duration of action (short-, intermediate-, or long-acting).[11] Cisatracurium is classified as a benzylisoquinolinium compound of intermediate onset and duration of action.[12]

Pharmacokinetics

The pharmacokinetics of cisatracurium have been demonstrated to be independent of dosage at doses of 0.1 mg/kg to 0.2 mg/kg (2 to 4 times the ED_{95}, respectively) in healthy patients undergoing elective surgery under nitrous oxide, opioid, and barbiturate anesthesia.[8]

Studies indicate that the time to onset for the neuromuscular blocking agents may be inversely proportional to the ED_{95} of the drug.[13,14] Cisatracurium is approximately three

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This series on Drug Information Updates from Hartford Hospital are provided by the Drug Information Center, Department of Pharmacy Services, Hartford Hospital. References available upon request. Editors: Moses Sing Sum Chow, Pharm.D.; R. A. Quercia, M.S., R.Ph. Editorial Board: D. Drezner, M.D., G. Gousse, M.S., R. Quintiliani, M.D., J. Laut, M.D.

times more potent than atracurium, and at doses up to the ED_{95} (0.02-0.05 mg/kg), the onset of action is seven minutes[7] as opposed to three to four minutes associated with atracurium;[15] however, due to the drug's stable hemodynamic profile, doses of three to four times the ED_{95}, are used for intubation and result in an onset of 2 and 1.5 minutes, respectively.[6] The duration of action of cisatracurium following a dose of 0.1 mg/kg (2 times the ED_{95}) was reported by Belmont et al as 45.0 ± 2.4 minutes.[7]

Based on a dose of 0.1-0.4 mg/kg (2-8 times ED_{95}) the volume of distribution at steady state (Vss) equals 145 mL/kg in patients receiving opioid anesthesia, and is 21% greater in patients receiving inhalation anesthesia.[6]

Cisatracurium is metabolized to form laudanosine and the monoquaternary acrylate metabolite, which do not possess neuromuscular blocking activity.[6] Laudanosine has been associated with transient hypotension and central nervous system (CNS) stimulation in animals.[6,16] Yate et al evaluated the plasma concentration levels of laudanosine in patients receiving atracurium infusions in the ICU and found no evidence of cerebral excitation with concentrations ranging from 1.9-5.1 mcg/mL.[17] The reported threshold for laudanosine-induced seizures in dogs is 17 mcg/mL,[16] This threshold may be higher in humans based on the lower cerebral spinal fluid to plasma ratio observed in humans *vs* dogs (0-14%[18] *vs* 40-60%,[19] respectively).[17] Due to the increased potency of cisatracurium and the lower total drug masses utilized, the concentrations of laudanosine are one third that which would be expected with equipotent doses of atracurium.[6]

Cisatracurium undergoes organ-independent Hofmann elimination,[6,7,9] a nonbiologic process which does not require renal, hepatic, or enzymatic function.[11] This process occurs at physiologic temperature and pH, and the rate of elimination is prolonged by a decrease in pH and temperature.[4,6,11] Nonspecific plasma esterases as well as plasma cholinesterase are not involved in the metabolism of cisatracurium.[20] Mean clearance values range from 4.5 to 5.7 mL/min/kg, and the elimination half life ranges from 22-29 minutes.[6]

Cisatracurium appears to be noncumulative since its recovery profile is independent of duration of infusion and dosage, at doses up to and including 8 times the ED_{95}.[7]

Clinical Experience

The benzylisoquinolinium compounds, with the exception of doxacurium and cisatracurium, have been associated with histamine release and subsequent hemodynamic changes such as increased heart rate and decreased arterial pressure.[21] The stable hemodynamic profile of cisatracurium has been validated by several authors.

Konstadt et al examined the effect of rapidly administered bolus doses of 0.1 mg/kg of cisatracurium (2 times the ED_{95}) on hemodynamically stable patients with significant cardiovascular disease. No hemodynamic changes associated with histamine release, as defined by a 20% decrease in mean arterial pressure, were noted.[12]

Lein et al evaluated the cardiovascular effects and histamine releasing properties of cisatracurium in patients receiving nitrous oxide, fentanyl, and thiopental. No effect on plasma histamine concentrations, no flushing, or clinically important cardiovascular effects were noted following rapid injection of bolus doses up to and including 8 times the ED_{95} (0.4 mg kg^{-1}).[9]

Cisatracurium has no clinically significant effect on mean arterial pressure or heart rate following doses up to and including 6 times the ED_{95} (0.3 mg/kg) administered over five to 10 seconds to patients with serious cardiovascular disease.[22]

Adverse Effects

In clinical trials involving surgical patients, adverse events were uncommon, occurred at a rate of <1%, and included: bradycardia 0.4%, hypotension 0.2%, flushing 0.2%, and rash 0.1%. In ICU patients, prolonged effect was reported in two of 28 patients (167 and 270 minutes) and bronchospasm in one of 68 patients.

Place in Therapy

Compared to other intermediate-acting neuromuscular blocking agents, cisatracurium is the only agent that undergoes organ-independent elimination, with the exception of atracurium. The primary advantage of cisatracurium over atracurium is the stable hemodynamic profile, allowing cisatracurium to be administered as a rapid bolus injection over five to 10 seconds. The use of cisatracurium in both the OR and the ICU appears to be favorable, especially in patients with organ dysfunction or those in which the cardiovascular side effects associated with other agents are undesirable.

Drug Interactions

Certain drugs may potentiate the neuromuscular blocking activity of nondepolarizing agents such as cisatracurium. These include: aminoglycosides, tetracyclines, bacitracin, polymyxins, lincomycin, clindamycin, colistin, and sodium colistemethate. Enhancement of neuromuscular blockade may also occur with concomitant use of magnesium salts, lithium, local anesthetics, procainamide, and quinidine.[6] Patients receiving chronically administered carbamazepine or phenytoin may demonstrate a resistance to the neuromuscular blocking effects of the nondepolarizing agents as evidenced by shorter durations of neuromuscular blockade.[6]

The time to onset of maximum blockade may be up to two minutes faster in patients with prior administration of succinylcholine. Cisatracurium has been used safely following varying degrees of recovery from succinylcholine-

induced neuromuscular blockade.[6]

Dosage and Cost of Therapy

Dosage.—Initial doses of 0.15 mg/kg (3 x ED_{95}) and 0.2 mg/kg (4 x ED_{95}) as components of propofol/nitrous oxide/oxygen anesthesia, produce good or excellent conditions for tracheal intubation in 2.0 and 1.5 minutes, respectively. A maintenance dose of .03 mg/kg produces a clinical duration of action of approximately 20 minutes, and is usually administered 40 to 50 minutes after an initial dose of 0.15 mg/kg or 50 to 60 minutes following an initial dose of 0.2 mg/kg of cisatracurium. Isoflurane or enflurane administration with nitrous oxide/oxygen may prolong the clinical duration of initial and maintenance doses.[6]

Following an initial bolus dose, continuous infusions may be started only after early evidence of spontaneous recovery from the bolus dose. Initial rates of 3 mcg/kg/min may be required to overcome the spontaneous recovery . Thereafter rates of 1 to 2 mcg/kg/min should be adequate to maintain neuromuscular blockade between 89 and 99% in patients receiving opioid/nitrous oxide/oxygen anesthesia.[6] Infusion rate reductions of up to 30 to 40% should be considered in patients receiving stable isoflurane or enflurane anesthesia.[6] For doses in the ICU, infusion rates of 3 mcg/kg/min should provide adequate neuromuscular blockade; however, due to interpatient variability, doses should be individualized and based on response to peripheral nerve stimulation.[6]

Cisatracurium should be protected from light and stored under refrigeration in the box to preserve potency. Once removed from refrigeration, the contents of the vial should be used within 21 days, even if re-refrigerated.[6]

Cost.—Cisatracurium is available as 2 mg/mL in 5 ml and 10 mL vials and 10 mg/mL in 20 mL vials (for ICU use only). The cost to Hartford Hospital for the 2 mg/mL is $8.19 and $14.36 for the 5 mL and 10 mL vials, respectively, while the cost for the 10 mg/mL, 20 mL vial for ICU use is $137.62. The cost of therapy of cisatracurium compares favorably with other intermediate-acting neuromuscular blocking agents such as rocuronium, vecuronium, and atracurium.

Conclusion

Cisatracurium is the newest nondepolarizing neuromuscular blocking agent to be released for clinical use. It has an intermediate onset and duration of action, and a pharmacodynamic profile similar to that of atracurium. It undergoes organ-independent degradation in the plasma (Hofmann elimination) to form metabolites which lack neuromuscular blocking activity. It has a stable hemodynamic profile and has not been shown to increase plasma histamine release at doses up to and including 8 times the ED_{95}. Cisatracurium is a cost effective alternative to atracurium and offers an improved hemodynamic safety profile.

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Hemochromatosis Arthropathy

DAVID P. NEUMANN, M.D.

AN 80-year-old female retired schoolteacher had been followed at our institution since 1982 when she presented with joint swelling, erythema and tenderness in the wrists and hands, and occasional knee pain. She had no history of anemia, preexisting liver disease, multiple transfusions, cardiac disease, diabetes mellitus, abnormal skin pigmentation, hyperparathyroidism, hypothyroidism, subcutaneous nodules, or Raynaud's phenomenon. She denied family history of liver disease or arthritis. Initial laboratory work-up revealed elevated hemoglobin and hematocrit levels for which she was referred to the hematology clinic. Subsequent investigation discovered an elevated serum iron value of 176 ng/dL (normal 75-150), elevated serum ferritin of >2000 ng/dL (normal 10-56), and percentage of iron saturation, 91% (normal <30%). Laboratory tests were negative for rheumatoid antigen and antinuclear antibodies. A liver biopsy showed 4+ iron storage and periportal fibrosis.

Plain radiographs of the hands and wrists (Fig. 1) showed joint-space narrowing, subchondral sclerosis and cyst formation, and osteophytosis. There was a predilection for the second and third metacarpophalangeal joints, with hook-like osteophytes on their radial side, relatively uniform joint-space narrowing in the interphalangeal joints, and calcification in the triangular fibrocartilage. Calcification without structural joint damage was also seen in the menisci (Fig. 2), glenohumeral joints (Fig. 3), and pubic symphysis (Fig. 4). Over the years she has been treated by weekly phlebotomy and her serum iron and ferritin and iron saturation levels have remained normal. She has remained symptomatic from her arthritis and radiographs have shown slow progression of arthropathy.

Abbreviations Used in Text
HLA=human lymphocyte antigen
CPDD=calcium pyrophospate dihydrate disease
HC=hemochromatosis

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Discussion

Primary or idiopathic hemochromatosis (HC) is a rare, autosomal recessive disease resulting in excessive intestinal absorption of dietary iron and its deposition in body tissues. An abnormal iron-loading gene has been implicated associated with the HLA complex on chromosome 6.[1] Tissue damage occurs in the liver, heart, skin, pancreas, gonads, pituitary, and joints. Patients usually become symptomatic in the fifth and sixth decades of life, and the disorder is 10 to 20 times more common in men than in women.[1,2]

Although the exact pathogenesis of tissue damage in hemochromatosis arthropathy is not known, the iron is characteristically found within the synovial lining cells.[1,2] The iron is thought to interfere with the ability of chondrocytes to synthesize collagen with resultant cartilage breakdown and degenerative arthritis.[2] Another theory suggests that the iron inhibits the function of pyrophosphatase, leading to an increase in intraarticular calcium pyrophosphate. This enzyme dysfunction may in turn cause chondrocyte destruction and cartilage degeneration.[3,4]

Chondrocalcinosis due to calcium pyrophosphate deposition in fibrocartilage (menisci, symphysis pubis, triangular fibrocartilage) and hyaline cartilage (knee, shoulder, and hip) is seen in more than one third of patients with

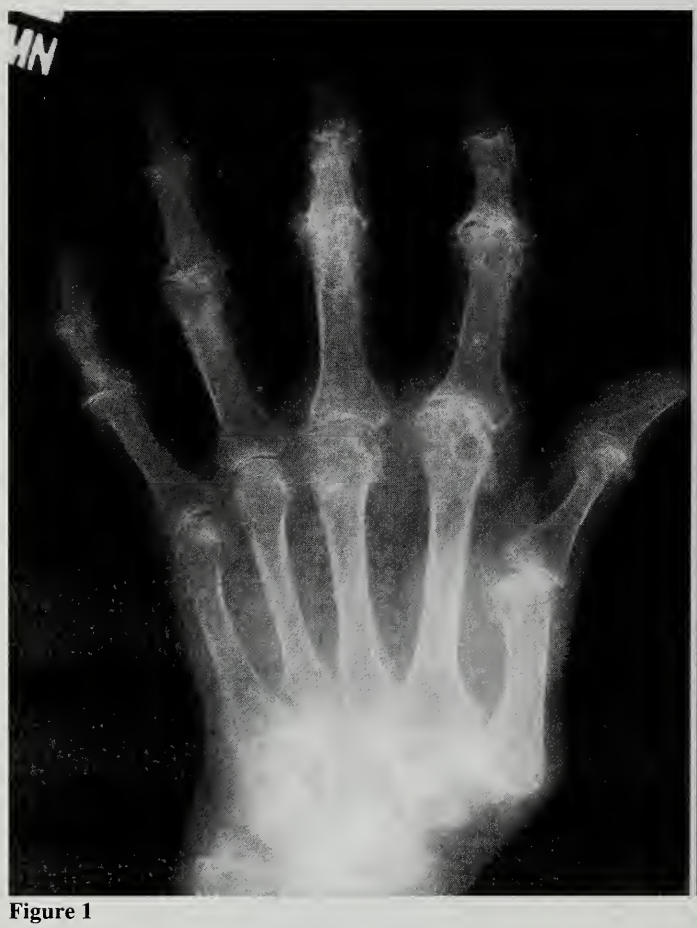


Figure 1

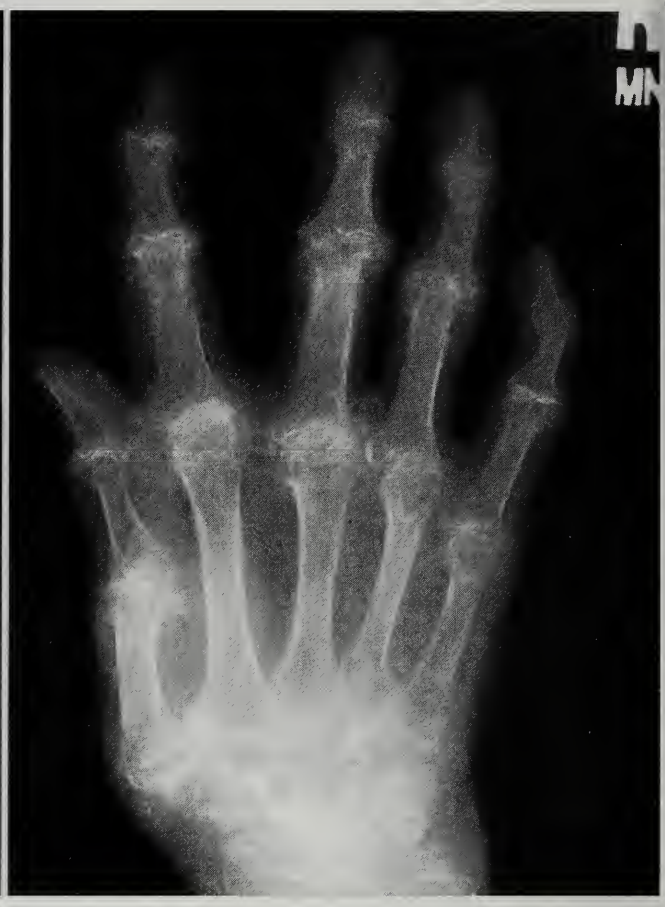


Figure 2

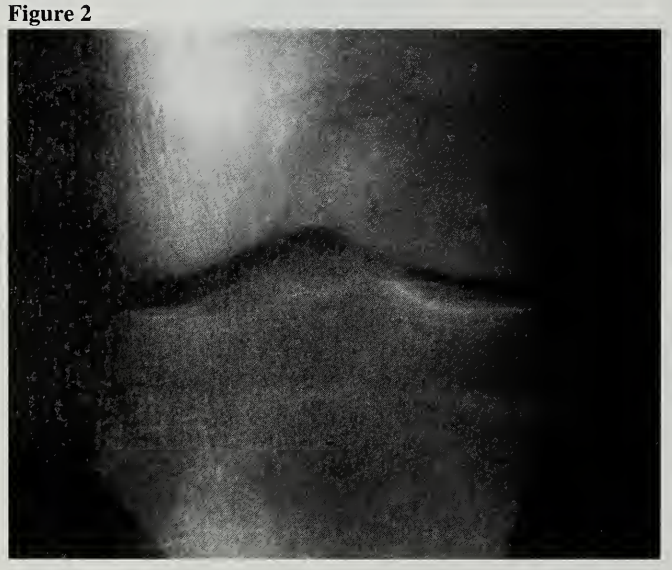
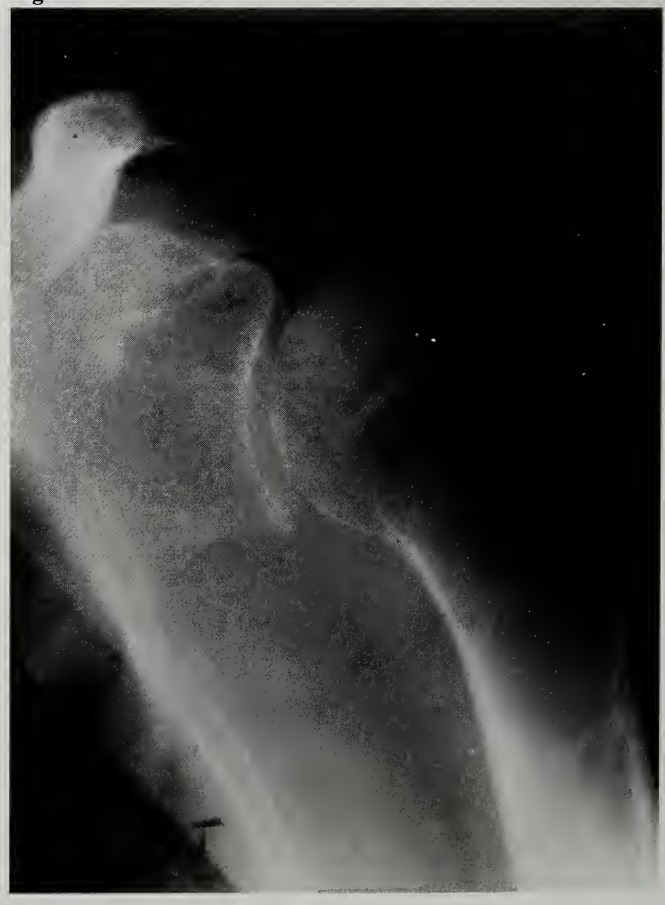


Figure 3



hemochromatosis but is not specific for the disease and may be absent even when structural joint damage is present.[2,3,4] In some patients, chondrocalcinosis is an isolated radiographic finding. Histologically and radiographically, the chondrocalcinosis and arthropathy seen in hemochromatosis are almost identical to that seen in idiopathic calcium pyrophosphate deposition disease (CPDD). These two disorders can often be distinguished on the basis of their distribution among joints, characteristic joint changes, and the speed of progression.[2,4] More specifically, features

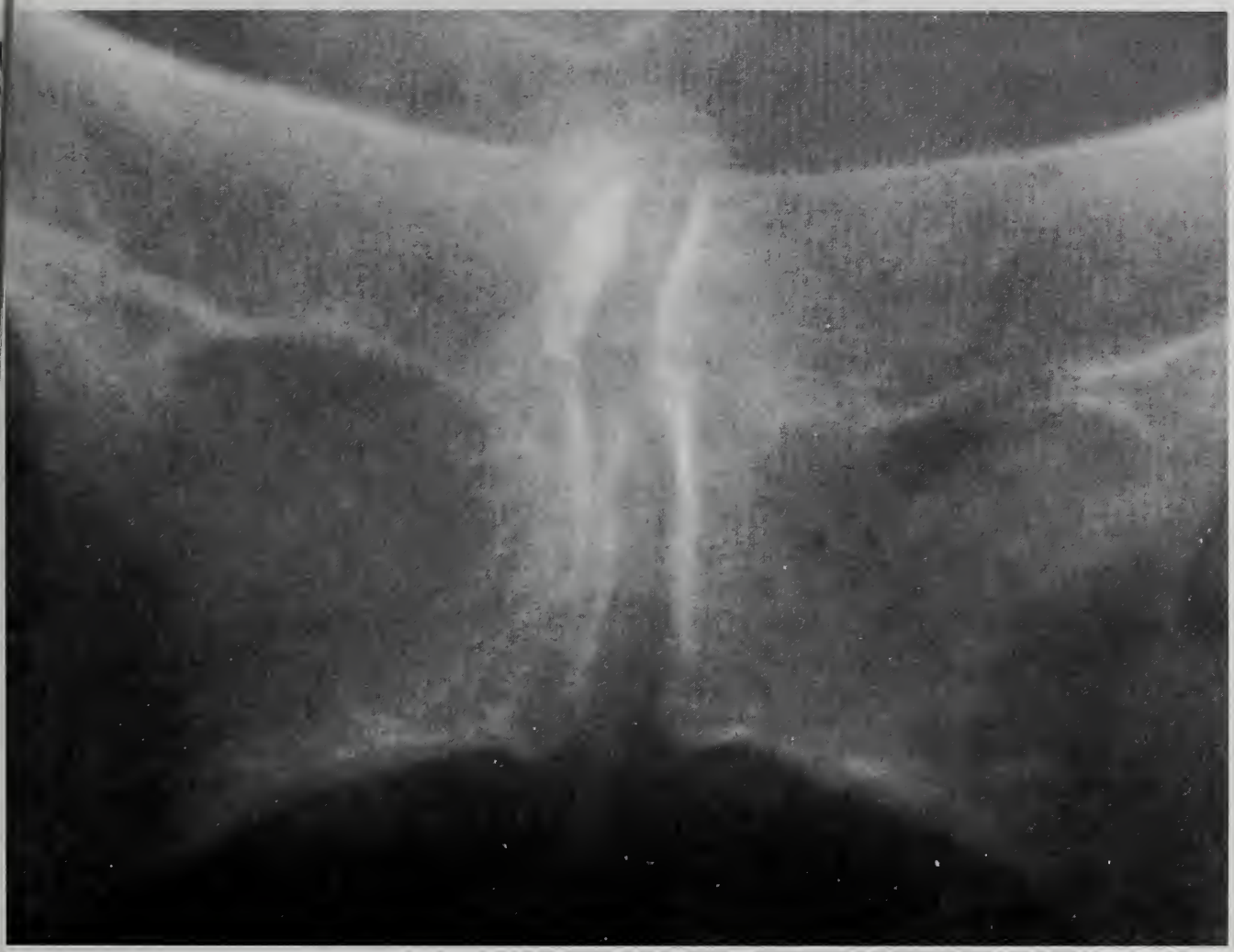


Figure 4

that favor hemochromatosis over CPDD disease include a predilection for metacarpophalangeal joints, the presence of hook-like osteophytes on the radial aspects of the metacarpal heads, relative sparing of the radiocarpal joint, and slow progression of disease.[2,4]

In hemochromatosis, serum ferritin and percent transferrin saturation are markedly elevated while serum iron is mild to moderately increased and the total iron-binding capacity is reduced.[1] Liver biopsy is necessary for definitive diagnosis and shows the characteristic excessive iron deposition in hepatocytes.

Patients may remain asymptomatic for years despite excessive iron deposition. However, if untreated, they may develop liver cirrhosis and portal hypertension, skin hyperpigmentation, diabetes mellitus, cardiac arrhythmias, congestive cardiomyopathy, and impaired gonadal function. There is an increased incidence of hepatocellular carcinoma of up to 30%.[1]

Treatment of hemochromatosis requires lifelong repeated phlebotomy to reduce iron stores. This can decrease the manifestations of diabetes mellitus, decrease skin discoloration, and improve overall survival. Unfortunately, the arthropathy usually progresses despite therapy.[1]

The radiographic differential diagnosis of hemochromatosis includes idiopathic CPPD, degenerative joint disease, primary hyperparathyroidism, and Wilson's disease, all of which may be associated with chondrocalcinosis. This distribution and appearance of bone and soft tissue changes and pertinent clinical data may be used to distinguish among these entities.

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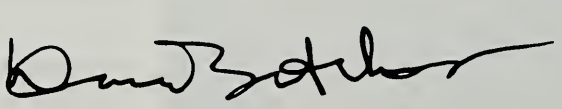
CDC's 50th Anniversary—1 July 1996

The Centers for Disease Control and Prevention—CDC—traces its roots to an organization established in the southeastern United States during World War II to prevent malaria among personnel training on U.S. military bases. On 1 July 1996, CDC formally celebrates its 50th anniversary as a federal agency dedicated to ensuring the public's health through close cooperation with state and local health departments and with other organizations committed to improving health in the United States and throughout the world.

To commemorate this anniversary, this issue of MMWR presents reports that offer special perspectives: a historical overview of CDC; national morbidity data from 8 June 1946, and 22 June 1996; reprints of articles published in CDC's earlier years—reports about an outbreak of smallpox and an outbreak of pentachlorophenol poisoning in newborn infants; and information resources about CDC. In addition, this issue reports the recent historic decision by the Council of State and Territorial Epidemiologists to designate the prevalence of cigarette smoking as a notifiable condition for national public health surveillance. A "latebreaking" report summarizes the investigation of a multistate outbreak of Cyclospora (an emerging pathogen) infection and underscores the continuing need to address new public health threats. Subsequent issues of MMWR this year may include reprints of selected reports of historical interest.

CDC and its employees invite you to use CDC services and learn more about CDC by visiting our site on the World-Wide Web (http://www.cdc.gov), by obtaining copies of information resources listed in this issue of *MMWR*, and by visiting the Global Health Odyssey exhibit at CDC headquarters in Atlanta.



David Satcher, M.D., Ph.D.
Director, CDC

—From *MMWR* 1996; 45:525

Notifiable Disease Surveillance and Notifiable Disease Statistics—United States, June 1946 and June 1996

HISTORICAL PERSPECTIVES

NATIONAL surveillance for infectious diseases is used to document the morbidity and impact associated with these conditions in the United States. This report includes morbidity data for the weeks ending 8 June 1946, and 22 June 1996, and describes changes since 1946 both in the procedures for conducting surveillance and in the incidence of selected diseases.

Surveillance Notes

The history of the reporting and tracking of diseases that could pose a risk to public health in the United States dates back more than a century. In 1878, Congress authorized the U.S. Marine Hospital Service (the forerunner of today's Public Health Service [PHS]) to collect morbidity reports on cholera, smallpox, plague, and yellow fever from U.S. consuls overseas; this information was used to institute quarantine measures to prevent the introduction and spread of these diseases into the United States. In 1879, a specific Congressional appropriation was made for collecting and publishing reports of these notifiable diseases. The authority for weekly reporting and publication was expanded by Congress in 1893 to include data from states and municipal authorities. By 1928, all states, the District of Columbia, Hawaii, and Puerto Rico were reporting 29 infectious diseases to the Surgeon General.

Fifty years ago, morbidity statistics published each week were accompanied by the statement "No health department; State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring." These statistics appeared under the heading "Prevalence of Disease—United States" in each issue of Public Health Reports printed by PHS, Office of the Surgeon General (Division of Public Health Methods) (see pages 533-6). In 1949, the collection, compilation, and publication of these morbidity statistics was transferred to the National Office of Vital Statistics, which produced the Weekly Morbidity Report. In 1952 the publication was renamed Morbidity and Mortality Weekly Report, and responsibility for the publication was transferred to CDC in 1961.

In 1946, reports of notifiable diseases consisted of summary statistics, transmitted by telegram each week by all state and some city health officers. The numbers were tabulated and sent immediately by letter to each site for verification. Data published in the 28 June 1946 issue of Public Health Reports were for the week ending 8 June 1946 (see pages 533-6). Today, for most diseases, each state health department enters individual case reports (rather than summary numbers) into a computer for transmission to CDC through the National Electronic Telecommunications System for Surveillance; data published in this issue of MMWR represent cumulative totals reported through 22 June 1996. Except for New York City and Washington, D.C., morbidity data from individual cities are no longer published weekly.

Because the reporting frequency varied for different conditions (ie, weekly, monthly, or annually), the precise number of conditions considered nationally reportable in 1946 is unclear. The first list of 41 infectious diseases that all states agreed should be nationally notifiable to PHS was developed at the first conference of state and territorial epidemiologists in 1951.[1] This group was the forerunner of the Council of State and Territorial Epidemiologists (CSTE), now CDC's primary collaborator for determining what is nationally reportable. In 1951, as now, because

Reprinted from *Morbidity and Mortality Weekly Report,* Historical Perspectives, June 1996; 45:(25)530-2.

reporting can be mandated only at the state level, reporting to CDC by the states was voluntary. Today, 52 infectious diseases are notifiable nationally;[2] in addition, at the 1995 CSTE meeting, the first noninfectious condition—elevated blood lead levels—was added to the list of conditions designated as reportable at a national level.[3] On 6 June 1996, CSTE added silicosis and acute pesticide poisoning/injuries to the list of nationally reportable conditions. Also on 6 June, CSTE unanimously agreed to include prevalence of cigarette smoking in the list of conditions designated as reportable by states to CDC; this is the first time tobacco has been included and the first time a risk behavior, rather than a disease or illness, has been included (see box, page 537).

Disease Notes

Comparing reports of notifiable conditions during June 1946 and June 1996 highlights some of the differences in the prevalent or common diseases. For example, 50 years ago, in the fundamentally prevaccine era, for the week ending 8 June 1946, health departments reported 161 cases of poliomyelitis, 229 cases of diphtheria, 1,886 cases of pertussis, and 25,041 cases of measles (see page 534-6). Through the week ending 22 June 1996, a cumulative total of no confirmed cases of polio, one case of diphtheria, 1,419 cases of pertussis, and 263 cases of measles have been reported for 1996. Since 1946, vaccines have been licensed for all four of these conditions: diphtheria and tetanus toxoids and pertussis vaccine in 1949, inactivated polio vaccine in 1955 and live attenuated vaccine in 1961, and measles vaccine in 1963. Because of the advent of these and other disease-control strategies, during the past decade public health authorities have established as targets for the year 2000 eradication of polio globally and measles elimination in the Americas. Four cases of another vaccine-preventable disease, smallpox, were reported for the week ending 8 June 1946, and a total of 337 cases for the entire year of 1946; the last documented cases of smallpox in the United States occurred three years later, in 1949. In 1958, the World Health Organization targeted smallpox for global eradication, a campaign that was declared successful in 1980.[4]

Among the 10 nationally notifiable infectious diseases that are most commonly reportable today, several were unknown in June 1946. The 10 most frequent nationally reportable infectious conditions in 1994 (the most recent year for which final data are available) were, in descending order, gonorrhea, acquired immunodeficiency syndrome (AIDS), salmonellosis, shigellosis, hepatitis A, tuberculosis, primary and secondary syphilis, Lyme disease, hepatitis B, and pertussis.[5] Fifty years ago, AIDS and Lyme disease were unknown. "Infectious hepatitis" (subsequently identified as hepatitis A) had just been identified, and morbidity reports for this condition first appeared in 1947. In 1953, serum hepatitis (subsequently named hepatitis B) was recognized as a separate entity, although it was included in the general category of hepatitis until 1966, when infectious and serum hepatitis began to be reported separately. Other diseases reported on a weekly basis during 1946 included amebiasis, murine typhus fever, and tularemia; during the past 10 years, these three conditions were deleted from the nationally notifiable disease list and are no longer routinely reported to CDC.

Because of the acknowledged underreporting of most diseases (particularly those typically characterized by clinically mild illness) to this passive surveillance system, the National Notifiable Disease Surveillance System (NNDSS) does not capture all cases of disease nationwide. However, these data are essential for monitoring disease trends and for determining relative disease burdens. In addition, this same NNDSS—with origins dating more than a century ago—continues to be used for monitoring the decline in incidence of vaccine-preventable and other diseases and to detect and document the appearance of new public health problems.

Reported by: Systems Operations and Information Branch, Division of Surveillance and Epidemiology, Epidemiology Program Office, CDC.

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Important Advances in Clinical Medicine

Internal Medicine

Kouichi R. Tanaka, MD, Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in internal medicine. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Internal Medicine of the California Medical Association, and the summaries were prepared under the direction of Kouichi R. Tanaka, M.D., and the panel.

Advances in Lung Transplantation

LUNG transplantation is a successful and recognized option for patients with end-stage lung disease. Clinical disorders that may require lung transplantation include emphysema, pulmonary fibrosis (including sarcoidosis), cystic fibrosis, and pulmonary hypertension (both primary and secondary). Improved immunosuppressive agents, refined surgical techniques, and the institution of prophylactic regimens against infectious diseases have prolonged survival. The acceptance of the efficacy of lung transplantation has resulted in a long list of candidates waiting to receive new lungs. Unfortunately, the donor pool remains stagnant. Many candidates wait for more than a year before they receive new lungs; about a third do not survive the wait.

The recently developed procedure of donor lobectomy has helped to increase the donor lung pool and reduce the waiting period for selected, severely ill patients who would not live long enough to receive cadaveric lungs. For some time, harvesting organs from living donors has been successful with kidney transplantation. Living donor lung transplantation, however, initially was met with intense criticism. The possible concerns, including the risk imposed on the donors, the fears of financial gain, and the strong emotional bonds that may distort judgment, were recognized early. These fears have been allayed by the establishment of strict guidelines to ensure the utmost safety for the donors and recipients. Additional criteria for living donors guarantee that the donors are not coerced, that they do not have substantial psychosocial difficulties, and that they have a normal medical state. To date, 60 donor lobectomies for 30 recipients have been done without donor mortality. One-year survival rates for the recipients are currently 70%, which is comparable to patient survival with cadaveric transplants.

Since the mid-1980s, the combination of cyclosporine, azathioprine, and prednisone has been the mainstay of immunosuppressive treatment to prevent organ rejection. Despite this regimen, acute rejection occurs at least once in about 60% of the recipients and develops between one and 12 weeks after transplantation. Chronic rejection usually develops between eight and 12 months after transplantation in 30% to 40% of the long-term survivors. The sine qua non of chronic rejection is bronchiolitis obliterans, which presents with dyspnea, a clear chest radiograph, and progressive airway obstruction. Treatment

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involves augmented corticosteroids, antilymphocytic agents (antilymphocyte globulin, OKT-3), or both. Cytotoxic agents (such as methotrexate and cyclophosphamide) and, sometimes, total lymphoid irradiation are also used to treat long-term rejection. Therapeutic intervention, although effective in the acute stage of rejection, has been discouraging for long-term rejection, and the prognosis is poor, particularly if treatment is not instituted early.

Two recently released immunosuppressive agents appear promising. Cyclosporine is a T cell-specific fungal macrolide that has been used since 1981. Because of its lipophilic properties, however, the metabolite is stabilized in an oil-based carrier, and its absorption is variable and sometimes incomplete. This leads to erratic serum concentrations that can result in suboptimal immunosuppression and a greater risk of graft loss or rejection. A new microemulsion of cyclosporine, Neoral, provides improved hydrophilic properties and more consistent absorption and bioavailability. Studies in normal volunteers and renal, liver, and lung transplant recipients have confirmed its effectiveness, its improved pharmacokinetic profiles, and its more consistent absorption. This preparation also has less intrapatient variability. All of this should lead to reduced episodes of graft rejection and possibly improved patient outcome. Tacrolimus is another new agent with similar actions to cyclosporine. Studies in liver, kidney, and lung transplant recipients have shown fewer episodes of rejection when compared with cyclosporine-based primary immunosuppression and a positive outcome when used for rescue therapy.

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Clinical Uses for Low-Molecular-Weight Heparins

ALTHOUGH widely used in Europe for a decade, low-molecular-weight (LMW) heparins have only recently entered the United States market. In relation to prophylaxis and the treatment of thromboembolism, they represent the newest pharmacologic advance since the introduction of warfarin. Low-molecular-weight heparins are degradation products produced by the depolymerization of standard unfractionated heparin. The resulting smaller molecular size produces several favorable pharmacologic features. Because they are not as firmly bound to proteins and to endothelial cells, they have excellent bioavailability following subcutaneous administration, leading to a plasma half-life two to four times longer than that of standard heparin. Through their binding mechanism with antithrombin III, their preferential affinity for factor X compared with factor II results in less prolongation of the activated partial thromboplastin time (aPTT). Hemorrhagic risk is reduced by less platelet interaction and by diminished microvascular permeability. In addition, LMW heparins have demonstrated a lower risk of heparin-induced thrombocytopenia.

Because the half-dozen commercially available LMW heparins are prepared through different depolymerization techniques with varying molecular size and antithrombotic characteristics, they should not be considered pharmacologically and clinically equivalent. The first LMW heparin approved for use in the United States was enoxaparin sodium. It is currently used for deep venous thrombosis prophylaxis following total hip or knee replacement and is administered in a fixed-dose regimen of 3,000 IU subcutaneously twice a day, starting 12 to 24 hours postoperatively and continued for seven to 14 days. The newest entry into the market is dalteparin sodium, which is used for deep venous thrombosis prophylaxis in at-risk patients undergoing an abdominal operation, with the first dose of 2,500 IU administered one to two hours preoperatively and once a day thereafter.

The important role of LMW heparins in deep venous thrombosis prophylaxis has been highlighted by the recently published guidelines of the Fourth American College of Chest Physicians Consensus Conference on Antithrombotic Therapy. Low-molecular-weight heparins have emerged as a recommended pharmacologic agent in every category of deep venous thrombosis prophylaxis with the exception of intracranial neurosurgery. Their primary focus has been in thrombosis prophylaxis following major joint replacement. These patients have an incidence of deep venous thrombosis as high as 70%, with pulmonary embolism being the leading cause of death following elective total hip replacement. Low-molecular-weight heparin is the pharmacologic agent of choice for deep venous thrombosis prophylaxis following total knee arthroplasty. The attractive features of LMW heparins for clinicians are that they are administered in a fixed-dose regimen and do not require the cumbersome and time-

consuming laboratory monitoring associated with warfarin therapy. They have also been used in patients with unstable angina and in the prevention of restenosis following coronary artery angioplasty and stent placement. In the latter instance, the use of LMW heparin appears to shorten the duration of hospital stays. Although LMW heparins are more costly than unfractionated heparin or warfarin, several studies have indicated that they may overall be the most cost-effective agent because of reduced laboratory monitoring, invasive testing, and subsequent hospital admissions. As more LMW heparins appear in the United States, market forces should lead to more competitive pricing.

The most exciting future for LMW heparins is in the treatment of deep venous thrombosis. Currently the standard approach to patients with this disorder necessitates five days of hospital stays for the administration of heparin by continuous intravenous infusion, adjusted most commonly by aPTT. Because of their excellent bioavailability and predictable anticoagulant response following subcutaneous administration and because monitoring of laboratory coagulation measures is not required, LMW heparins offer the potential for outpatient treatment of deep venous thrombosis. A recent meta-analysis of ten clinical trials using various LMW heparins compared with standard heparin in the initial treatment of deep venous thrombosis showed statistically significant reductions for symptomatic thromboembolic complications, clinically important bleeding, and mortality. Encouraging data from a recent Canadian trial found enoxaparin to be effective and safe in the outpatient treatment of deep venous thrombosis. If results from larger ongoing trials prove beneficial, we may be able to substantially reduce the length of stay or even eliminate many of the 300,000 hospital admissions each year for this disorder.

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Exercise-Induced Asthma

ALTHOUGH the causes of exercise-induced asthma are still unknown, there are two theories that are best supported by clinical observation. One postulates that exercise leads to water loss in the airways, inducing the release of inflammatory mediators that stimulate bronchospasm. The second theorizes that cooling of the airways by exercise causes changes in blood flow in the bronchial circulation that also induce the release of bronchospastic mediators.

Three classes of drugs have been adopted by the International Olympic Committee for exercise-induced asthma: agonists, cromolyn sodium, and theophylline. Aerosolized steroids have not been shown to be helpful in exercise-induced asthma unless administered over a four-week period before exercise. Theophylline has been effective only in patients who use it long term. Recent studies have attempted to establish the efficacy of experimental longer-acting β_2-agonists and cromolyn in exercise-induced asthma. One showed improved protection from this disorder when using long-acting cromolyn and nedocromil compared with cromolyn alone.

Although we still have much to learn about it, the following is recommended for the management of exercise-induced asthma. The diagnosis is made by showing a

15% fall in the forced expiratory volume in one second or the peak expiratory flow rate monitoring at 0, 3, 5, 10, 15, or 20 minutes after 6 minutes of strenuous exercise. Specific information from the history, obtaining positive histamine or methacholine challenge tests, or demonstrating adequate responses to therapeutic trials of drugs effective in treating exercise-induced asthma can also help make the diagnosis.

Most persons who suffer from exercise-induced asthma respond to two inhalations of a β_2-agonist (short or long acting) administered five to ten minutes before exercise. Salmeterol (long-acting β_2-agonist) seems to provide longer protection than the shorter-acting β_2-agonists (albuterol). For more difficult cases, prolonged protection can be obtained by combining cromolyn or nedocromil with β_2-agonists. No difference in efficacy was found between cromolyn and nedocromil, and therefore, either one can be used. A trial of ipratropium bromide in metered-dose inhalant form, in combination with Antagonists or cromolyn sodium or both, can be of some benefit. Both β_2-agonists and cromolyn sodium are available in metered-dose inhalers, in capsule form specifically designed for spinhalers, and in solutions for nebulization. The oral administration of β_2-agonists has not been effective in the treatment of exercise-induced asthma.

For those patients with more severe exercise-induced asthma, it is recommended to choose a sport that requires less exertion—that is, swimming, downhill skiing, and recreational cycling as opposed to running, cross-country skiing, and bicycle racing. It is also recommended to undergo a brief warm-up period before engaging in more intense exercise and a warm-down after completing exercise. The abrupt onset and sudden cessation of exercise puts persons more at risk for exercise-induced asthma. Finally, patients who have exercise-induced asthma and who are sensitive to airborne pollens should not undergo strenuous exercise outdoors during the high-pollen season.

Several additional factors are known to exacerbate the response to exercise in patients with asthma and should be kept in mind in the prevention of this disorder. The more severe the underlying asthma, the greater the adverse response to exercise in asthma. The longer the duration of exercise, the greater the risk of it inducing asthma (this applies to the intensity of exercise as well). Exercise-induced asthma is much more likely to be provoked in cold and dry weather conditions.

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Osteoporosis—New Techniques for Screening, Diagnosis, and Clinical Monitoring

OSTEOPOROSIS is a major public health problem that already affects 25 million Americans, is responsible for about 1.5 million fractures annually, and has been estimated to result in direct and indirect health care expenditures of $10 billion annually. The National Osteoporosis Foundation estimates that half of all women older than 50 years will have an osteoporosis-related fracture. Men are also at risk, with a 5% lifetime risk of hip fracture.

Bone is continuously resorbed and formed throughout life in the process of remodeling or turnover. After ages 30 to 40, resorption exceeds formation, resulting in net bone loss in older women and men. In perimenopausal women, estrogen deficiency results in more rapid bone loss for five to ten years after menopause. Osteoporosis occurs when bone loss is sufficient to cause mechanical weakness and increased risk of fracture. Bone loss cannot be reversed, but the likelihood of complications can be minimized by identifying patients, even older ones with high rates of bone turnover and low bone density, and by intervening to slow or stop net bone loss.

The incidence of osteoporosis is expected to rise even further as the population ages. It is, therefore, imperative to identify the persons most at risk for bone loss and fracture. Risk factors and causes of secondary osteoporosis, such as hyperthyroidism, hyperparathyroidism, or treatment with glucocorticoids, should be searched for during the initial patient evaluation. Because osteoporosis is the result of a process that continues for the life of the patient, physicians must remain alert to the development of contributing factors during long-term follow-up as well. The routine history and physical examination are useful in discovering these disorders. For instance, the history may reveal primary or secondary amenorrhea, alcohol and cigarette use, drug treatment, dietary habits, gastric or intestinal resections, sunlight deprivation, and immobilization. Physical examination may suggest such conditions as hyperthyroidism or glucocorticoid excess. Screening laboratory tests, such as complete blood count, chemistry panel, erythrocyte sedimentation rate, urinaly-

sis, and serum and urine protein levels may suggest endocrine, gastrointestinal, or renal disease or cancer. In these cases, specific diagnoses should be established and addressed as soon as possible.

Should risk factors and the initial clinical assessment indicate a strong likelihood of osteoporosis, bone mineral density can be established with bone densitometry. Bone turnover rate and the risk of further bone loss can be determined by measuring biochemical indices of bone resorption and formation. Measuring the bone mineral density is useful in assessing current bone mass and establishing baselines for follow-up. It correlates with bone strength: low bone mineral density is associated with fracture risk. The use of dual-energy x-ray absorptiometry has made accurate and reproducible bone mineral density measurements possible for several years.

Bone density alone, however, cannot predict future changes in bone tissue. Dynamic measurements of the bone remodeling process, made possible by recent breakthroughs in immunoassay technology, now offer the potential of stratifying the risk of future bone loss, determining the need for treatment, and monitoring the efficacy of treatment over time. The rate of bone turnover can be assessed by measuring levels of one or more of the biochemical markers associated with bone resorption and formation that are released into the blood or urine. Testing for biochemical markers is noninvasive and relatively inexpensive.

New immunoassays for biochemical bone markers are now reaching clinical laboratories. The pyridinium cross-links of collagen, deoxypyridinoline, pyridinoline, and their associated peptides, measured in urine, are newly recognized markers for bone resorption that are highly sensitive and specific for the degradation of bone collagen. Bone-specific alkaline phosphatase and osteocalcin are serum markers that have good sensitivity and specificity for bone formation. Together, the measurement of pyridinium cross-links and bone-specific alkaline phosphatase or osteocalcin provide an index of bone turnover rate. The clinical usefulness of these new techniques is twofold. They identify adults at high risk for the development of osteoporosis or older adults with established osteoporosis but continued high rates of bone loss, so that aggressive therapy can be instituted to prevent or limit the disorder. They also provide a noninvasive, sensitive, and dynamic tool for monitoring the clinical course and effect of therapy.

Whether evaluating a perimenopausal woman or treating an older man with osteoporosis, a similar assessment and follow-up algorithm can be followed. The baseline measurement of pyridinium cross-links and a bone formation marker along with bone mineral density may determine the current and future risks of fracture and bone loss. The initiation of a suitable antiresorptive therapy, such as hormone replacement, calcitonin, or bisphosphonate, appropriate for the patient and condition can then be undertaken. Progress should be checked within three months to verify efficacy and compliance. Thereafter, annual bone mineral density and bone marker measurements are used as monitors. By allowing better management of bone loss and osteoporosis, these new tools in clinical medicine provide the opportunity to prevent or decrease morbidity, mortality, and health care costs and retain or improve the quality of patients' lives.

EDITOR'S NOTE: The author has a financial interest in a small, public company that researches, develops, and commercializes improved diagnostic methods for managing bone diseases. This company's current and future products measure some of the compounds mentioned in this epitome.

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Renal Complications of Hepatitis C Virus Infection

INFECTION with the hepatitis C virus (HCV) has recently been implicated in the pathogenesis of several extrahepatic disorders, notably mixed cryoglobulinemia and cryoglobulinemic glomerulonephritis. The HCV, an RNA virus, is transmitted by blood products, injection drug abuse, sexual contact, or vertical transmission. Although acute hepatitis C is usually mild and anicteric, the infection leads to chronic hepatitis in at least 50% of cases and chronic active hepatitis, cirrhosis, or hepatocellular carcinoma in about 10% of all cases.

Once established, spontaneous resolution of HCV viremia is unusual. Furthermore, HCV can replicate in extrahepatic sites (such as peripheral blood mononuclear cells). Chronic antigenic stimulation and persistent viral replication cause polyclonal B-lymphocyte proliferation, antiglobulin immunoglobulin (Ig) M antibody (rheumatoid factor) production, and type III mixed cryoglobulinemia in about a third of patients with chronic hepatitis C. A smaller percentage of patients exhibit a monoclonal B-lymphocyte proliferation and monoclonal IgM rheumatoid factor production resulting in type II mixed cryoglobulinemia.

Hepatitis C infection is now recognized as a major cause of mixed cryoglobulinemia. Circulating HCV RNA or HCV antibodies (or both) are detectable in the serum of most patients with type III and virtually all patients with type II mixed cryoglobulinemia, as compared with less than 1% of the general population. Nearly all circulating HCV RNA in these patients is contained in cryoprecipitable immune complexes. Clinically, types II and III mixed cryoglobulinemia share a common syndrome characterized by weakness, arthralgia, purpura (due to leukocytoclastic vasculitis), Raynaud's phenomenon, and peripheral neuropathy. Renal involvement is uncommon in type III mixed cryoglobulinemia, but is common in type II mixed cryoglobulinemia, with glomerulonephritis developing in more than 50% of patients.

The most common renal lesion associated with mixed cryoglobulinemia is membranoproliferative glomerulonephritis type I. Patients with membranoproliferative glomerulonephritis type I typically present with proteinuria and microhematuria. Mild to moderate renal insufficiency is present in about 50% and the nephrotic syndrome in about 25% of the cases. The course of the renal disease is unpredictable, with partial or complete remission, persistent urinary abnormalities without renal insufficiency, and intermittent exacerbations and remissions each occurring in approximately a third of the affected patients. Rarely, acute glomerulonephritis with oliguric renal failure occurs. Chronic renal failure occurs in less than 10% of cases, usually after prolonged periods.

Laboratory findings include type II cryoglobulinemia (monoclonal IgM), C4 hypocomplementemia, and occasional C3 hypocomplementemia. Antinuclear and antineutrophil cytoplasmic antibodies are typically absent. Hepatitis C virus serologic tests should be obtained in all patients with membranoproliferative glomerulonephritis even in the absence of circulating cryoglobulins or discernible liver disease, as these features are frequently absent at the time of the initial evaluation.

Light-microscopic examination of a renal biopsy usually reveals mesangial proliferation, accentuated lobulation of the glomerular tuft, and double-contoured glomerular basement membranes. Occasionally a patient may have exudative glomerulonephritis, focal glomerulosclerosis, or membranous nephropathy. Immunofluorescent microscopy usually reveals mesangial and capillary deposits of IgM, IgG, and C3. Subepithelial immune deposits consistent with type III membranoproliferative glomerulonephritis or sparse immune deposits similar to acute exudative and proliferative glomerulonephritis are occasionally encountered.

Several histologic features may differentiate the cryoglobulinemic form of membranoproliferative glomerulonephritis from the idiopathic form. For example, the glomerular capillary lumens may be filled with deposits that display the ultrastructural features of cryoglobulins, such as granular or fibrillar structures and possibly virus-like particles. Other findings include massive monocyte infiltration, endocapillary proliferation, vasculitis of small and medium-size renal arteries, and extensive capillary wall abnormalities.

A growing body of evidence suggests that HCV infection underlies nearly all cases of cryoglobulinemic glomerulonephritis. A plausible theory for the pathogenesis of the renal lesion is that HCV-IgG antibody complexes are bound by the monoclonal IgM rheumatoid factor, which has a strong affinity for the glomerular basement membrane and mesangial matrix.

Treatment

Interferon alfa (IFN-cx) inhibits HCV replication and, as such, can be effective in the treatment of chronic hepatitis C infection. A six-month course of IFN-α (3 million units 3 times a week) has been shown to reduce viremia and improve liver function and histologic features in 50% of patients. The disease frequently relapses following the cessation of therapy, however.

Several studies have suggested that IFN-α therapy may improve extrahepatic complications of HCV infection, specifically mixed cryoglobulinemia and membranoproliferative glomerulonephritis. Interferon alfa therapy reduces serum HCV RNA to undetectable levels in most

patients with mixed cryoglobulinemia, lowers circulating levels of cryoglobulin and rheumatoid factor, and lessens clinical symptoms such as purpura and arthralgias. Viremia and cryoglobulinemia almost always recur, however, after therapy is discontinued.

About half the patients with HCV-associated membranoproliferative glomerulonephritis exhibit a substantial reduction in proteinuria with an increase in the glomerular filtration rate following IFN-α therapy. The greatest clinical response is seen in patients showing the disappearance of HCV viremia. Viremia and proteinuria generally recur after the cessation of therapy, however.

Interferon alfa is usually well tolerated. Its common side effects include a flu-like illness, insomnia, and malaise. In addition, peripheral neuropathy may transiently worsen in patients with mixed cryoglobulinemia, and proteinuria may rarely increase during therapy. The average wholesale drug price for a six-month course of IFN-α is about $850. Despite the relatively high cost of the drug, recent studies concluded that IFN-α is cost-effective for chronic HCV hepatitis.

In patients with severe extrahepatic manifestations, plasmapheresis and immunosuppressive therapy using prednisone and cytotoxic agents such as cyclophosphamide or chlorambucil has had some success. Large-scale controlled studies of these therapies are lacking, however. High doses of intravenous methylprednisolone sodium succinate have been reported to improve renal function and proteinuria in patients with HCV-associated acute glomerulonephritis, despite the persistence of viremia and cryoglobulinemia.

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New Treatments of Sickle Cell Disease

DESPITE improved treatment of sickle cell disease, there is no widely available cure. This encourages continued emphasis on prenatal diagnosis. The polymerase chain reaction (PCR) has provided improved methods for detecting sickle cell genes in fetal DNA obtained by chorionic villus sampling or amniocentesis. One PCR method, reverse dot blotting, can screen in a single reaction for the several genes that cause sickle cell disease—hemoglobin (Hb) S. Hb (S. and all the β-thalassemia alleles of African Americans.

In persons with sickle cell disease, transfusions are a traditional approach. Indications are now better understood and include the imminent dangers of hypoxemia or acidosis for which partial exchange in adults or children is indicated. A need exists for improved blood rheology to prevent recurrent strokes or to treat priapism, which often require simple or partial exchange transfusion. Pain crisis is not an indication for transfusions, nor is prophylactic transfusion necessary in pregnancy. Simple transfusion before an operation is as good as more aggressive partial exchange and entails fewer complications. The controversy over the use of preoperative transfusion versus no transfusion at all will be resolved only with a randomized trial.

Hemoglobin F protects against the ravages of sickle cell disease because it inhibits Hb S polymerization. Pharmacologic agents that increase Hb F production include arginine butyrate, which appears to have limited therapeutic benefit in sickle cell disease, and hydroxyurea, which in adults substantially decreases the severity of anemia and the frequency of pain crisis, acute chest syndrome, hospital admission, and transfusion. The questions of long-term risks in adults and of efficacy and short- and

long-term risks in children are unanswered. Many experts recommend administering hydroxyurea at an initial daily oral dose of 15 mg per kg for adults with sickle cell anemia (Hb SS) who have frequent pain or transfusion dependence and who are willing to avoid pregnancy. Bone marrow suppression must be monitored carefully.

The occlusion of sickle cell blood flow is mediated by the adherence of sickle reticulocytes to vascular endothelium, followed by the trapping of poorly deformable, dehydrated sickle erythrocytes. An artificial surfactant (RheothRx) that inhibits the adherence of sickle erythrocytes to endothelial cells was found to reduce the narcotic requirement during painful crises and may soon be available for treating acute painful episodes. The severe dehydration of sickle erythrocytes results from the combined effects of the calcium-sensitive potassium efflux and potassium-chloride cotransport. These may be inhibited, respectively, by the administration of oral clotrimazole and magnesium, which preserve sickle erythrocyte hydration and are under study to ascertain their therapeutic potential.

Bone marrow transplantation for sickle cell disease offers great benefit but substantial risk. Its cost of about $200,000 compares favorably with the approximately $112,000 per year required to care for a transfusion-dependent patient with sickle cell disease. Risk-benefit considerations of the quantity and quality of life reveal that for patients with Hb SS, the life expectancy is in the fifth decade and that pain occurs rarely or never in about a third of patients. An enigma associated with bone marrow transplantation concerns exposing patients in whom severe disease may never develop to the risk of transplantations versus withholding possible cure from patients until they have a potentially disabling complication. Of 22 children with severe sickle cell disease treated with bone marrow transplantation, 20 are alive, 17 with stable donor engraftment. Survival and event-free survival are 88% and 75%, respectively. A greater use of bone marrow transplantation for sickle cell disease will depend on continued improvement in methods and will probably be confined largely to children.

Correcting the expression of or replacing the sickle cell gene has become a real possibility. The greatest success in achieving the goals of safe, efficient, and stable transfer of a normal globin gene into hematopoietic stem cells has been with the use of the adenoassociated virus (AAV) as a vector. This virus does not cause human disease, integrates transgenes into the host genome, accommodates high-level expression, and infects a wide variety of human cells. The transfection of human erythroleukemia cells with AAV containing a human γ-globin gene linked to an HS-2 promoter resulted in normal regulation and a high-level expression of γ-globin. Similar approaches to gene therapy are predicted to provide effective therapy for sickle cell disease soon.

Increased understanding of sickle cell disease pathophysiology has led the way to a variety of new therapeutic interventions. The clinical approach to this disease soon will be greatly changed as the result.

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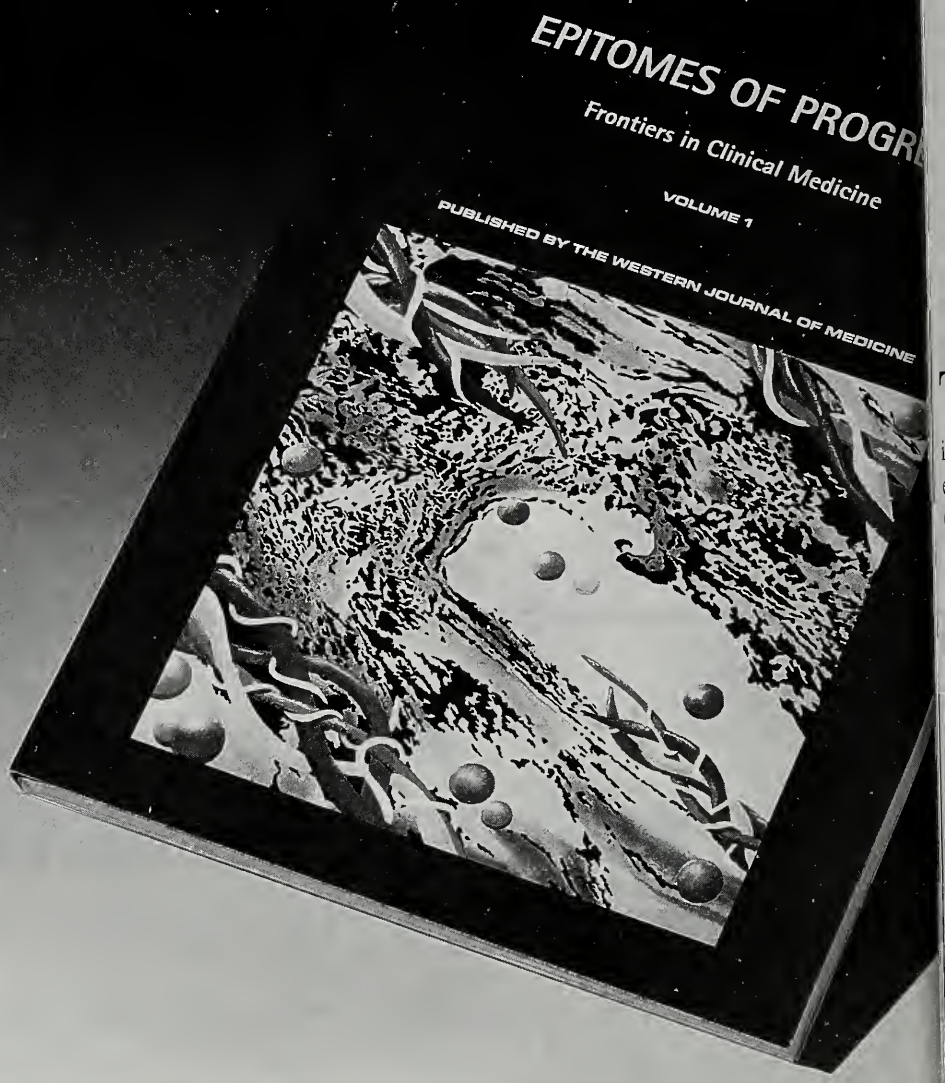

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Stamford Hospital *vs* Vega: Connecticut Affirms Right to Patient Self-Determination

RICHARD L. NEWMAN, J.D.

THERE is a legal maxim that "hard cases make bad law," because difficult factual situations often result in convoluted or unclear legal rulings. Occasionally, however, a hard case makes good law. One such case is the Connecticut Supreme Court decision in *Stamford Hospital vs Vega*,[1] released on 16 April 1996.

In this case, the Supreme Court explicitly recognizes the principle that an individual's common law right of bodily self-determination extends to the right to refuse medical treatment, even if that treatment is potentially lifesaving.

Facts

Nellie Vega, a Jehovah's Witness, was admitted to the Stamford Hospital to deliver her first child. That evening she signed a release requesting that no blood or its derivatives be administered to her during her hospitalization, and relieving the hospital and its employees of liability that might result from her refusal to permit the use of blood in her treatment.[2] The next day, Vega delivered a healthy baby. Following the delivery, however, she bled heavily as a result of the retained piece of placenta. She agreed to have a dilation and curettage, but, prior to the procedure, signed another release reiterating her wish not to receive blood or its products and released the hospital from liability. Despite the procedure, she continued to bleed, and her physicians believed that "it was essential that she receive blood in order to survive."[3] Accordingly, at 2:00 A.M., the hospital filed a complaint against Vega, requesting that the court issue an injunction which would permit the hospital to administer blood transfusions to her.

The trial court held an emergency hearing beginning at 3:25 that morning. After hearing testimony from Vega's husband and argument from attorneys, the court, "relying on the State's interest in preserving life and protecting innocent third parties, and noting that Vega's life could be saved by a blood transfusion, granted the hospital's request for an injunction permitting it to administer blood transfusions to her."[4]

As a result, Vega was transfused, recovered, and discharged from the hospital. She thereafter appealed from the trial court's order, and after a somewhat complicated procedural history, the issue came before the Connecticut Supreme Court.

Analysis

Vega asserted that the court's issuance of the injunction, permitting the hospital to transfuse her, violated four rights: 1) her common law right of self-determination; 2) her federal constitutional right to bodily self-determination; 3) her federal constitutional right to free exercise of religion; and 4) her state constitutional right of religious liberty. The court found that the common law right of self-determination was dispositive and did not address the other three claims.

The hospital argued that its duty to Vega's baby necessitated keeping the baby's mother alive. This argument was unsuccessful. The court concluded that while the hospital had a legitimate interest in protecting its patients, this interest did not extend so far as to permit the hospital to override Vega's wishes. "Whether Vega's child grows up with one, rather than two, parents, or for that matter, with no parent at all, was simply not an issue sufficiently within the scope of the hospital's legitimate interest ... to justify disregarding Vega's clearly expressed proscription against administering blood transfusions to her."[5]

Having disposed of the hospital's contention, the court then turned to the parameters of the common law right of

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bodily self-determination. In the opinion, the court reiterates three well-known principles:

"The right to refuse medical treatment is a right rooted in this nation's fundamental legal tradition of self-determination."[6]

"No right is held more sacred or is more carefully guarded by the common law than the right of every individual to the possession and control of his own person, free from all restraints or interference of others, unless by clear and unquestioned authority of law."[7]

"Every human being of adult years and sound mind has a right to determine what shall be done with his own body; and a physician who performs an operation without his patient's consent commits an assault, for which he is liable in damages."[8]

These three principles provide the underpinning for the doctrine of informed consent. As the United States Supreme Court has stated, the "notion of bodily integrity has been embodied in the requirement that informed consent is generally required for medical treatment."[9] Hence, "the logical corollary of the doctrine of informed consent is that the patient generally possesses the right not to consent, that is, to refuse treatment."[10] Stated another way, "the common law doctrine of informed consent is viewed as generally encompassing the right of a competent individual to refuse medical treatment."[11]

In this case, however, the hospital and the trial court were faced with a difficult decision. That is, were they obliged "to respect Vega's decision to refuse blood transfusions, even though her decision would likely have led to her death?"[12]

The preservation of life is not merely a laudable goal for physicians, but is a compelling one. The hospital and its doctors "quite understandably did not wish to stand by and see a healthy young woman die."[13] Nonetheless, the opinion explicitly holds that these interests "are not sufficient to take priority over Vega's common law right to bodily integrity, even when the assertion of that right threatens her own life."[14]

"The refusal to subject oneself to certain forms of medical treatment, or to any treatment whatsoever, may often lead to more serious health consequences and, ultimately, to death. If the common law right to refuse medical treatment, based on the doctrine of informed consent, is entitled to respect, that respect must be accorded when the consequences are likely to be the most serious—in matters of life and death."[15]

Three limitations on this common law right are implicit in the court's ruling. The right of bodily self-determination, as it applies to refusal of treatment, may be exercised where the patient "[1] was sufficiently informed of the consequences of [his or her] decision; [2] was competent to make such decision; and [3] freely chose to refuse the [treatment]."[16] Where these conditions are met, however, the hospital's interest in the health and care of its patients must give way to the patient's informed decision to refuse a course of treatment. The hospital has "no common law right or obligation to thrust unwanted medical care on a patient who, having been sufficiently informed of the consequences, competently and clearly decline[s] that care."[17]

Significance and Implications

The *Vega* decision is significant in several respects. First, it is a clear, explicit affirmation of the notion of patient autonomy; that is, the patient's right, when properly informed, and competent, to refuse a certain course of treatment. As such, it is an extension of the earlier holding in *McConnell vs Beverly Enterprises-Connecticut, Inc.*[18] that patients may refuse life supporting treatments when terminally ill.

In *McConnell*, the Connecticut Supreme Court addressed the viability of the Removal of Life Support Systems Act.[19] In affirming the statutory scheme embodied in the Act, the Court touched upon the common law right of self-determination, noting that the statutes were a mechanism to implement the common law right of self-determination and the constitutional right of privacy.[20] *McConnell*, however, did not focus on the parameters of the common law right, and was decided instead on the statutory grounds embodied in the Act.[21] *Vega*, therefore, stands as the most clear and complete articulation of the right of self-determination, and recognizes that the right extends to all cases.

Second, *Vega* is significant because it suggests that the right of bodily self-determination will not be narrowly construed. That is, the common law right of bodily self-determination is not automatically or routinely subordinate to the interests of other entities, such as the state, the health-care provider, or even the patient's next of kin, in the absence of some more compelling circumstance. The full extent of this right is not yet determined, and will have to be balanced against other, competing interests. In his concurrence in *McConnell*, Justice Healey suggested that "the only remaining question is whether there is some compelling state interest which overrides [one's] right to self-determination concerning [one's] own body,"[22] and identified four possible compelling state interests: "1) the preservation of life; 2) the prevention of suicide; 3) the protection of innocent third parties; and 4) the maintenance of the ethical integrity of the medical profession."[23]

The *Vega* opinion does not expressly adopt, or even refer to the interests suggested by Justice Healey, but clearly balanced the State's interest in protecting innocent third parties (in this case, Vega's baby), against her right of self-determination. Of the four factors proposed by Justice Healey, however, three have been resolved in

favor of patient autonomy. In his concurrence in *McConnell*, Justice Healey found that the patient's right of self-determination outweighed the maintenance of the ethical integrity of the medical profession, and that the refusal to use a gastrostomy tube did not constitute suicide. *Vega* stands for the proposition that the common law right of self-determination includes the right to refuse lifesaving treatment. Of course, balancing the right of self-determination against these compelling state interests is not precluded by *Vega*, but the opinion has two consequences. First, the court should not blindly defer to mere assertions that there is some compelling state interest which overrides the patient's right to self-determination. Instead, the court should conduct a more searching inquiry, starting from the standpoint that patient self-determination prevails unless it is proven that there is an actual, compelling interest which overrides the exercise of this right. Second, of the interests outlined by Justice Healey, only the third, protection of innocent third parties, retains undiminished authority.

Finally, the opinion is significant because it marks how advanced the notion of patient autonomy has become. The notion that the patient has a voice in his or her care is now taken for granted. The only question now is under what circumstances the patient's right of self-determination must give way (such as, for example, the concern for a full-term, but as yet unborn baby). The *Vega* decision establishes that the ultimate choice in electing or refusing lifesaving treatment rests, not with the hospital or physician, but with the patient.

The implications of the decision are likewise important. First, when confronted with a patient who refuses a potentially lifesaving course of treatment, the health-care provider should proceed with extreme caution. It must maintain a record that the patient's consent is truly informed. No boilerplate forms will automatically suffice to establish this. Moreover, the hospital, if dealing with a competent patient, must be prepared to respect the patient's wishes even when those wishes may result in what to the health-care providers is a seemingly needless death.

Additionally, the physician or hospital may need to balance the patient's wishes against other interests, particularly the protection of innocent third parties. The *Vega* Court, for example, specifically declined to decide whether the hospital would have been justified in transfusing Vega had she begun to hemorrhage before giving birth, and the transfusion was necessary to safeguard the health or life of the baby.[24] If the physician or hospital is concerned that some compelling interest outweighs the patient's rights to refuse care, the guidance of the court may be sought. *Vega* holds that a hospital has "standing in its own right to invoke the judicial process ... to seek ... guidance regarding it obligations in this difficult position."[25] Thus, where the physician or hospital truly believes that some compelling interest outweighs the patient's right to refuse medical care, prompt advice from the court must be sought. Likewise, where the patient is not competent, the health-care provider should seek advice of counsel, and move expeditiously to appoint a patient advocate or guardian *ad litem* to represent the interests of the incompetent patient.

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2. The release signed by Vega was a standard form provided to her by the hospital. The form stated:

   Patient's Release Form for Refusal of Blood

   I request that no blood or blood derivatives be administered to [name] during this hospitalization. I hereby release the Stamford Hospital, its personnel, the responsible physicians and any other person participating in my case from any liability for any unfavorable reactions or any untoward results due to refusal to permit the use of blood and its derivatives. The risks attendant to my refusal have been explained to me, and I understand that if I should need a blood transfusion and, that if the same is not done, my chances for regaining normal health are seriously reduced, and that, in all probability, my refusal of such treatment or procedure will seriously imperil my life and result in my death.
3. *Stamford Hospital vs Vega*, 236 Conn. at 650.
4. *Id.* at 651-52.
5. *Id.* at 663-64.
6. *Id.* at 664, citing *McConnell vs Beverly Enterprises-Connecticut, Inc.*, 209 Conn. 692, 701, 553 A.2d 596 (1989).
7. *Id.* at 664, citing *Union Pacific Railway Co. vs Botsford*, 141 U.S. 250, 251 (1891).
8. *Id.* at 664, citing *Schmeltz vs Tracey*, 119 Conn. 492, 495, 177 A. 520 (1935).
9. *Cruzan vs Director, Missouri Dept. of Health*, 497 U.S. 261, 269 (1990).
10. *Cruzan*, 497 U.S. at 270.
11. *Id.* at 277.
12. *Stamford Hospital vs Vega*, 236 Conn. at 665.
13. *Id.* at 665.
14. *Id.* at 665.
15. *Id.* at 666.
16. *Id.* at 666.
17. *Id.* at 666.
18. *McConnell vs Beverly Enterprises-Connecticut, Inc.*, 209 Conn. 692, 553 A.2d 596 (1989).
19. Conn. Gen. Stat. §§ 19a-570 to 19a-575.
20. *McConnell*, 209 Conn. at 698-99.
21. In a concurring opinion, Justice Healey suggested that the family, on behalf of the incapacitated patient, could exercise her common law right to refuse such extraordinary medical care, and that this common law right was neither merged into nor extinguished by the enaction of the Act:

   The majority acknowledges a common law right of self-determination. It also suggests, without finding the necessity to decide, that, after the present statutory scheme was enacted, common law rights may be 'residual .... if any such rights remain.' ... I believe that such a common law right of self-determination exists. I agree with the majority to the extent that it acknowledges the existence of such a common law right.

   McConnell (Healey, J., concurring), at p. 712. The majority opinion, however, rested upon the validity of the statutory scheme embodied in the Act, and not upon the common law right of self-determination.
22. *Id.* at 716.
23. *Id.* at 716.
24. *Vega*, 236 Conn. at 663, n. 13.
25. *Id.* at 666.

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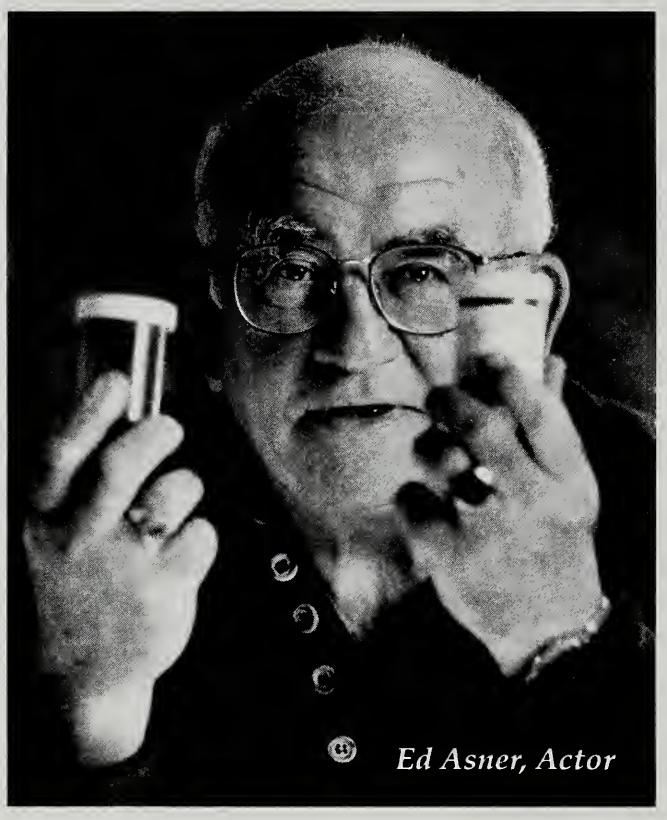

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Persistent Vegetative State in Connecticut: Legal History and the Presentation of a Case

LAURIS C. KALDJIAN, M.D.

Introduction

THE persistent vegetative state (PVS) is a rare neurological condition that presents unique challenges in medicine, ethics, and law. Medical uncertainties surround both diagnosis and prognosis; ethical dilemmas test deep convictions about personhood and autonomy; legal definitions struggle to keep pace with the subtleties of neurological diagnosis and the careful distinctions of ethical analysis. The interweaving complexity of these challenges makes it difficult to treat the subject of PVS without considering these diverse disciplinary concerns simultaneously even when the interface between disciplines is awkward. Nevertheless, clinicians may be inclined to look preferentially to the law for guidance in the midst of ethical uncertainty in order to determine an appropriate course of action when treating a patient in PVS, especially as there may be anxiety over potential legal repercussions after medical therapies are withheld or withdrawn.

Laws that regulate the treatment of patients in this condition are forced to grapple with a number of profound ethical questions that attach to its unusual medical features. Is a patient in a persistent vegetative state a person? How should probabilities (of regaining consciousness) be incorporated into moral decision-making? Is the fundamental measure of the value of human life a matter of its quality or of its so-called sanctity? How should the interests of an incapacitated patient be determined? How should "life-support" be defined? Must all patients always receive nutrition and hydration? Is there a moral difference between active and passive means of facilitating death? Is there such a thing as dying of "natural causes" and, if so, is it a concept capable of discriminating between morally acceptable and unacceptable deaths?

I shall address the ethical issues posed by the limitation of treatment in the care of patients in PVS by focusing on the history of Connecticut law that pertains to the withdrawal of life support from incapacitated persons. The development of this law is presented in order to pursue four goals: 1) to discuss Connecticut's current statute governing the limitation of medical treatment in patients who are incapacitated and either terminally ill or permanently unconscious; 2) to test this law against the case of a resident of Connecticut who was in a persistent vegetative state but failed to meet all the requirements of the statute; 3) to highlight the power that courts have to override the decisions of legislative bodies; and 4) to consider the implications of our present law for the professional jurisdictions of law and medicine, the status of quality of life judgments in surrogate decision-making, and discussions about physician-assisted suicide.

Persistent and Permanent Vegetative States: Definition and Diagnosis

Coined in 1972, the term persistent vegetative state (PVS) refers to the condition of persons with severe brain damage who have progressed from coma to a state of wakefulness without evidence of consciousness.[1] While consciousness is inherently subjective, there are three lines of scientific observation that support the belief that patients in PVS are unconscious, or awake but not aware: 1) motor responses to various stimuli suggest primitive reflexes integrated at a subcortical level rather than learned voluntary behaviors; 2) neuropathological autopsy studies lead to the conclusion that the brains of persons in

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persistent vegetative states are anatomically insufficient substrates for consciousness; and 3) studies of cerebral glucose metabolism reveal metabolic rates in PVS even lower than those in patients undergoing general anesthesia.[2] The diagnosis of a persistent vegetative state is usually made when wakeful unconsciousness has lasted longer than a few weeks. As reflected in the word *persistent* this is a retrospective designation appropriate to a diagnosis. By contrast, a *permanent* vegetative state refers to the condition of wakeful unconsciousness when it is deemed irreversible. As reflected in the word *permanent* this is a prospective evaluation of prognostic significance.

Though the persistent vegetative state shares certain features with other neurological diagnoses it should be distinguished from the following distinct conditions: coma (sustained unconsciousness with neither wakefulness nor awareness); brain death (permanent absence of all brain functions, including those of the brainstem); locked-in syndrome (a conscious state in which communication and movement are impossible due to severe voluntary motor paralysis); and dementia (progressive loss of cognitive function). The Multi-Society Task Force on PVS concluded that a vegetative state may be diagnosed on the basis of the following criteria: 1) no evidence of awareness of self or environment; 2) no evidence of purposeful responses to sensory stimuli; 3) no evidence of language comprehension or expression; 4) the presence of sleep-wake cycles; 5) preserved autonomic brain function; 6) bowel and bladder incontinence; and 7) variably preserved spinal and cranial-nerve reflexes.[3]

Outcomes: The Challenge of Accurate Prognosis

Because of the wide variability in outcomes among patients in PVS, it has been difficult to discover clinical parameters that predict outcomes in individual cases, especially the recovery of consciousness. It is known, however, that the etiology of brain damage bears heavily on prognosis: PVS induced by trauma carries a significantly better prognosis than PVS induced by nontraumatic injury (eg, anoxia). Based on probabilities of recovery, the Multi-Society Task Force concluded that a *persistent* vegetative state can be judged *permanent* 12 months after a traumatic injury and three months after nontraumatic injury in both adults and children.[4] Their review of the literature identified only four verified cases of PVS in which consciousness was regained more than 12 months after the time of injury. However, there are those who believe that late recovery of consciousness may not be as rare as these authors suggest. A 1993 study from England documented the recovery of consciousness after four or more months in 11 of 43 patients admitted to a rehabilitation unit; four of the patients had suffered anoxic injury and nevertheless experienced improvement between four to 36 months after injury. The study's author concluded that the "recovery period is prolonged and may continue for several years," and he argued for the availability of specialized rehabilitation programs to facilitate better outcomes.[5]

Certainty remains elusive in the diagnosis of PVS. As there is no single test to confirm the diagnosis, neurologists must rely on clinical examinations which are inevitably operator-dependent. The problem of clinical uncertainty is displayed by a study in which 37% of patients referred to a neurorehabilitation program with the diagnosis of coma or PVS were found to have been misdiagnosed —that is, they were not in fact unconscious.[6]

Connecticut's First Legal Contact with PVS

Foody et al vs Manchester Memorial Hospital et al was argued in the Superior Court of Connecticut (Hartford), and decided on 6 March 1984. Sandra Foody was a 42-year-old woman with a 24-year history of multiple sclerosis whose neurological deterioration had left her legally blind and confined to wheelchair and bed. She was unable to sit or hold her head up, but she could swallow and respond to sound. On 15 December 1983, she suffered respiratory arrest in her home and was emergently delivered to Manchester Memorial Hospital, where she was promptly intubated and successfully resuscitated. At the time the plaintiffs' complaint was filed (two months later) her condition was described as "semicomatose." Her electroencephalogram was abnormal and reflex testing suggested that only brainstem function was preserved. Though sleep patterns were observed she did not show any evidence of pain perception. The court accepted testimony which concluded that

> [i]n all medical probability she has no cognitive function, ie, her brain is incapable of synthesizing and understanding outside stimuli. Her condition is best described as awake but unaware. Her semicomatose state is not believed to be attributable to multiple sclerosis, but to an aspiration while eating, which produced acute respiratory arrest, causing insufficient oxygen to the brain.
>
> Having shown no sign of improvement after two months of treatment, Sandra's condition is considered to be permanent and irreversible. Generally, recovery of consciousness is very unlikely for patients with hypoxia who remain comatose or in a persistent vegetative state for more than one month.
>
> No diagnostic or therapeutic interventions are viewed as appropriate. The prognosis for improvement is considered hopeless. Sandra will require long-term care in a chronic care facility, connected to a respirator for the rest of her life. It is estimated that should the respirator be disconnected, brain death would occur after approximately 10 minutes.[7]

Foody's family brought action for permanent injunctive relief that would restrain defendant hospital personnel and attending physicians from using artificial devices intended to continue Sandra's respiration and pulse. The court found in favor of the plaintiffs and its holding included the following: recognition of this patient's right to decide to terminate artificial life support would not

undermine the state's interest in preserving human life; circumstances were appropriate for the exercise of the patient's right to refuse therapy; no state interest was strong enough to outweigh this right to refuse therapy; the family could lawfully act as the patient's substitute decision maker; and hospital personnel and attending physicians would not be subject to civil or criminal liability if the family decided to discontinue life support.

The court based its ruling on the right to privacy and the right to self-determination. Though not explicitly expressed in the U.S. Constitution, the right to privacy "arises from penumbras of specific guarantees in the bill of rights, specifically the first, third, fourth, fifth, and ninth amendments,"[8] and it includes freedom from unwanted infringements of bodily integrity such as medical treatment. The right to self-determination has long been recognized as common law and expresses the individual's fundamental right to be left alone which, in the context of this case, protects a patient's right to refuse life-sustaining medical treatment. The court also upheld the right of a guardian, in the vicarious assertion of the right of an incompetent or unconscious ward, to accept or deny medical care. In their opinion, to deny a right because its subject is incapable of exercising it is to deny the right itself. Therefore, "[i]t is incumbent upon the state to afford an incompetent the same panoply of rights and choices it recognizes in competent persons."[9]

After establishing the common law right to self-determination the *Foody* court recognized that this right is not absolute. Referring to case law from other states[10] the court enumerated the countervailing state interests which might override the right to self-determination: 1) the preservation of human life; 2) the protection of interests of innocent third parties; 3) the prevention of suicide; and 4) the maintenance of the ethical integrity of the medical profession. With respect to the preservation of human life the court held that the "state's interest in preserving life weakens and the individual's right of privacy grows as the degree of bodily invasion necessary for treatment increases and the prognosis dims."[11] This position gave approving voice to prior court decisions that consider "the state's interest as being determined by the patient's prognosis, while the nature of the treatment defines the patient's interest."[12] In Sandra Foody's case the burden of treatment was heavy, entailing 24-hour nursing care, antiepileptic therapy, artificial respiration, respiratory suctioning, and nasogastric feeding. Furthermore, her prognosis was grim, given the superimposition of a vegetative state onto her late-stage deterioration from multiple sclerosis.

The court went on to state that there were no significant third-party interests at stake and that prevailing medical ethical opinion was in harmony with the decision to refuse or withdraw life-sustaining therapy under the conditions of this case. With respect to the state's interest in preventing suicide it was flatly stated that Foody's foreseen death following the termination of life support would not constitute a suicide. The reasons for this conclusion are two: 1) one cannot necessarily infer an intention to die from the refusal of treatment; and 2) when death results from "natural causes" it is clear that "the patient did not set the death-producing agent in motion with the intent to cause his own death."[13]

Finally, having established that an incompetent patient does have the right to refuse medical treatment, the court then asked how that right may be lawfully exercised. In its discussion the court acknowledged the justified use of both the "substituted judgment" (subjective) standard and the "best interests" (objective) standard. Of note, Sandra Foody had at no time expressed her opinion on the use of life support systems on patients without reasonable hope of recovery. Nevertheless, the court deferred to the apparent good faith of her family who wished to exercise by "substituted decision-making the patient's right to discontinue artificial systems."[14]

The *Foody* decision is notable in several respects: 1) with respect to prognosis it accepts the position (questionable on the basis of more recent literature) that patients who remain in anoxia-induced vegetative states for more than one month have no reasonable hope for the recovery of consciousness; 2) in claiming that the state's interest in human life is proportional to a patient's prognosis, the state's decision to preserve human life appears to be resting on an unstated standard of quality-of-life; 3) its claim that refusal of life-sustaining therapy in these circumstances is not a suicide relies on (a) a concept of intent, (b) a moral distinction between active and passive behavior, and (c) the presumption that it is always morally permissible to die of "natural causes" (which assumes a legitimate distinction between "natural" and "unnatural"); 4) the legal foundation for its decision is premised both on the said constitutional right to privacy and on the common-law right to self-determination; and 5) the court was willing to countenance either of the two standards of surrogate decision-making (substituted judgment or best interests).

Legislative Intent: The Removal of Life Support Systems Act

After six years of failed attempts to pass legislation specifying the conditions under which life-sustaining medical treatment can be withdrawn lawfully from terminally ill patients, the Connecticut Legislature finally passed a law commonly referred to as "the living will bill." The Removal of Life Support Systems Act[15] was passed by the House of Representatives on 5 June 1985, the year after *Foody* was decided. The original purpose of this act was

to assist citizens in their desire to determine the character of their own medical care in the event they should become incapacitated. However, the central concern of the legislation that finally resulted was the liability of physicians; thus the act primarily sets out the conditions under which physicians may withdraw life support and be guaranteed immunity from criminal prosecution or civil litigation.[16] The form of a model "living will" was included in the act, but the application of such a will is narrowly construed, restricted to conditions in which a person is incapacitated and diagnosed with a terminal condition.

There were various problems in this 1985 Act. Particularly troubling were the definitions of its stipulated terms. "Life support system" was strictly tied to mechanical or electrical devices and excluded (without qualification) the provision of nutrition and hydration. Reference was made to that which "prolongs the dying process" without defining how the dying process should be identified. "Terminal condition" was defined as "the final stage of an incurable or irreversible medical condition which, in the opinion of the attending physician, will result in death" without explaining how "the final stage" of an illness should be identified.

In laying down the terms as they did, the legislators intended to preserve the distinction between nutrition and hydration, on the one hand, and all other "life support systems" on the other. Hence in the definition of "life support system" the provision of nutrition and hydration is singled out for exclusion. As Kaye points out, this deliberately expressed the legislative intent to exclude the removal of food and water from the purview of this Act.[17] This legislative intent is clearly recorded. Upon questioning from Rep. O'Neill during debate, Rep. Wollenberg replied, "we do exclude the provision of nutrition and hydration from the actual life support system." Rep. O'Neill queried again: "just for legislative intent, I want to be perfectly clear that if a physician does deem the patient to be in a terminal condition, he will still afford nutrition and hydration?" Rep. Wollenberg replied, "Yes, that is correct. That is the intent of this legislation, that in all cases hydration and nutrition shall be provided."[18] Nevertheless, four years later the Connecticut Supreme Court chose to override this intent by imposing on the Act a distinction between natural and artificial means of administering nutrition and hydration in order to decide the case of Carol McConnell.

Court *vs* Legislature: The Power of Statutory Construction in *McConnell*

Carol McConnell, a 57-year-old wife and mother of three adult children, suffered a severe head injury on 18 January 1985, and was soon diagnosed as being in a persistent vegetative state. Her life thereafter was sustained by nutrition and hydration delivered through a gastrostomy tube. Her husband and children sought injunctive and declaratory relief to allow the removal of the gastrostomy tube from their wife and mother. The trial court (Superior Court, Danbury) found that McConnell, who had been an emergency room nurse, "was in a terminal condition and that prior to her accident she had clearly expressed her wishes not to be kept alive by artificial means were she ever to be in a permanent vegetative state."[19] The trial court ruled in favor of the plaintiffs, and the defendant attorney general, the defendant state's attorney, and the defendant guardian ad litem appealed.

McConnell vs Beverly Enterprises-Connecticut, Inc. was decided by the Connecticut Supreme Court 31 January 1989. The Court found that the factual statutory requirements had been met in McConnell's case, and that there could be no suicide when in fact the action in question was protected by the exercise of a constitutional right as enshrined in the legislature's Removal of Life Support Systems Act. Thus, there could be no grounds for criminal prosecution. Remarkable, however, was the court's strategy of resolving the contradiction between the plaintiffs' request to remove nutrition and hydration and the statutory language excluding nutrition and hydration from "life support system," which appeared effectively to prohibit the discontinuation of nutrition and hydration in this case. The State Supreme Court recognized the Superior Court's reliance on rights to privacy and self-determination that coexist with the Removal of Life Support Systems Act's specification of the conditions under which life support may be removed from terminal patients. However, it looked for, and claimed to find, a window of statutory opportunity through which it could avoid the deeper conflict posed by the case, that of the Act's exclusivity: "If ... the statute itself affords the plaintiffs the relief they seek in this case, we need not reach the issue of the statute's arguable exclusivity." [20] Instead of challenging the statute on constitutional grounds, the court chose to impose its mind by modifying the terms of the statute. In this way it claimed to have found a middle way and avoided the question of whether the statute might require a terminally ill patient to receive unwanted nutrition and hydration.

After stressing the existence of a constitutional right to privacy and a common law right to self-determination (refusal of therapy), the court proceeded to analyze the terms of the statute. First it found an implicit distinction between three different kinds of medical care: beneficial medical treatment, nutrition and hydration, and comfort care and alleviation. Next, the exclusion of the provision of nutrition and hydration from "life support system" was

acknowledged as problematic but nonetheless amenable to resolution: "it makes sense to recognize a further distinction between artificial technology to assist nutrition and hydration *a fortiori* included within the definition of a 'life support system,' and normal procedures to assist feeding."[21] The Act thus "implicitly contemplates the possible removal from a terminally ill patient of artificial technology in the form of a device such as a gastrostomy tube, but it does not, under any circumstances, permit the withholding of normal nutritional aids such as a spoon or a straw."[22]

By distinguishing between artificial and normal means of feeding the court claimed to have found the implicit meaning of the statute, the legislative history notwithstanding: "Those legislators who expressed their view that "in all cases hydration and nutrition shall be provided," may well have been referring to providing hydration and nutrition by ordinary rather than by extraordinary means."[23] This suggestion appears implausible and seems to tell us more about the court's constitutional position than about legislative intent. Proof of their failure to respect that intent is found in the subsequent legislative record (see below), but it was also recognized within the court. In his concurring opinion Justice Healey agreed with the court's decision but objected to the majority's analysis and statutory construction, which he believed were flawed. In his opinion the use of a gastrostomy tube did not fall within the statutory scheme. The case, he argued, should have been decided in favor of the plaintiffs on the basis of the common law right to self-determination.

The court also maintained that several contested points of fact were sufficiently proved by the trial court. That the patient was in a terminal condition was a matter of the attending physician's determination. That there was consent by the next of kin was evidenced by the cast of plaintiffs (the patient's husband and adult children). That the patient had expressed, prior to her accident, her wish to decline life support if ever in a persistent vegetative state was clearly and credibly established by testimony. As discussed below these contested points were later to be addressed by the legislature as it sought to conform its statute to the law set forth by the court's decision.

Lastly, in ruling that there would be no suicide if McConnell's family chose to remove her gastrostomy tube, the court referred to the claim in *Foody* that death from disease does not constitute an intention to die. "In exercising her right of self-determination [she] merely seeks to be free of extraordinary mechanical devices and to allow nature to take its course. Thus, death will be by natural causes underlying the disease, not by self-inflicted injury."[24]

Legislature *vs* Court: Missouri's Legislative Prerogative in *Cruzan*

In contrast to *McConnell*, *Cruzan*[25] revealed a court that exercised restraint rather than construction. In deciding *Cruzan* the U.S. Supreme Court set before itself the narrow question of the permissibility of Missouri's statutory requirement "that evidence of an incompetent's wishes as to the withdrawal of life-sustaining treatment be proved by clear and convincing evidence."[26] The Court held that: 1) Missouri is entitled to its evidentiary standard; 2) liberty interests must be balanced against state interests; 3) incompetent persons do not necessarily possess the same rights as those who are competent; 4) a state may decline to make "quality of life" judgments, expressing instead an unqualified interest in the preservation of human life; and 5) the Due Process Clause does not demand that a state accept the "substituted judgment" of family members in the absence of sufficient evidence of a patient's wishes.

The Court acknowledged the authoritative sources which inform state court decisions: state constitutions, statutes, and common law. But these sources are not available to the United States Supreme Court. Rather, in this Court, the question was "simply and starkly whether the United States Constitution prohibits Missouri from choosing the rule of decision which it did."[27] The Court repeated the constitutional principle that competent persons have a liberty interest in refusing unwanted medical treatment, consistent with the Fourteenth Amendment. But it made clear that the determination of a violation of this right depends on how this right weighs against other relevant interests. The Court maintained that when a person is unable to exercise his or her right to make a voluntary choice to accept or refuse medical treatment, such a right must be exercised for that person by a surrogate. Such surrogacy was allowed by Missouri, but only within certain procedural limits, the acceptability of which was now at issue. The Court held that the Constitution does not forbid the establishment of such limits.

The Court pronounced generally on the state's interest in human life and the manner in which people are allowed to die. "We do not think a State is required to remain neutral in the face of an informed and voluntary decision by a physically able adult to starve to death."[28] While the Due Process Clause protects liberty, it also protects life—even forms of life which some might consider to be of unacceptably poor quality. "[W]e think a State may properly decline to make judgments about the 'quality' of life that a particular individual may enjoy, and simply assert an unqualified interest in the preservation of human life to be weighed against the constitutionally protected interests of the individual."[29] Because of the legitimate interest a State may have in the life of its citizens it is also entitled

to place a greater burden of proof on those who would choose to terminate the life-sustaining treatment of an incompetent person. To err on the side of caution maintains the status quo, whereas to err on the side of termination results in a decision that is irrevocable.

Lastly, the majority decision insists that only a subject herself could be the unquestioned arbiter of her own wishes. Family members may in fact know and honor the interests of their incapacitated loved ones, but "there is no automatic assurance that the view of close family members will necessarily be the same as the patient's would have been had she been confronted with the prospect of her situation while competent."[30] Therefore a State may lawfully choose to defer only to the reliably expressed wishes of the patient.

Justice O'Connor's concurring opinion stresses the limited objective of the Court in *Cruzan* and takes the opportunity to emphasize that "the Court does not today decide the issue whether a State must also give effect to the decisions of a surrogate decisionmaker .... In my view, such a duty may well be constitutionally required to protect the patient's liberty interest in refusing medical treatment."[31] Given the lack of national consensus on the best solution to this perplexing problem she recommended it to the "laboratory" of the States.

Justice Brennan's dissent expresses disapproval over the majority's failure to recognize the liberty interest to be free of unwanted medical intervention as a fundamental right that must be given free exercise, for to deny the exercise of a right is to deny the right itself. No State interest, insists Brennan, could outweigh Cruzan's right to refuse medical treatment. He argues further that it is unfair to place an asymmetrical evidentiary burden on those who are acting in the interests of the patient, and that the Court is wrong to assume that the State is more likely to make the choice that the patient would have wished for than someone who knew the patient intimately.

Similarly, Justice Stevens objects to the majority's failure to honor the patient's liberty right sufficiently to see that any State interests pale in comparison. He criticizes the majority's line of reasoning that drives a theoretical wedge between a person's life and his or her liberty. Such theorizing, he maintains, results in the denial of "the personhood of those whose lives are defined by the State's interests rather than their own. This consequence may be acceptable in theology or in speculative philosophy ... but it is radically inconsistent with the foundation of all legitimate government."[32] Stevens accuses the majority decision of being a thinly veiled "effort to define life's meaning" rather than an attempt to preserve life's sanctity.[33] In his opinion, Nancy Cruzan was no longer a human life worthy of that name for "there is no sense in which 'quality of life' can be said to pertain."[34] The fundamental failure of the Court in this decision, he concludes, is a misplaced and damaging focus on evidentiary standards instead of the best interests of the patient. "The best interests of the individual, especially when buttressed by the interests of all third parties, must prevail over any general state policy that simply ignores those interests."[35]

Legislative Revision: Following the Courts' Lead

In 1991, after *McConnell* and *Cruzan*, the Connecticut Legislature revisited the Removal of Life Support Systems Act in order to make it conform to the law set down by these state and federal high court decisions. This may have come as a surprise to those who thought that the legislature would either do nothing (and let the State Supreme Court, case by case, decide which treatments are "artificial" and which are "normal") or proceed to clarify and tighten the statute in order to deny the court's mistaken conclusion that the legislature only intended *ordinary* nutrition and hydration to be continued in every case. Before describing some of the salient details of this legislative revision it should be observed that the debate spawned by this revision gave occasion for Rep. Wollenberg to voice his disappointment over the Connecticut Supreme Court's failure to apprehend the intent of their earlier legislation. Rep. Wollenberg regretted the Supreme Court's decision that artificial feeding could be withheld after "we expressly said on the floor of this House ... for legislative intent ... that we did not mean you could withhold it."[36]

As introduced by Rep. Lawlor, the intention of the revised bill was "to bring our statutes in conformity with the current Connecticut law as defined by our own state Supreme Court and the United States Supreme Court."[37] The amendment, which passed, attempted to solve four problems. First, the statute should not give a warrant for any so-called veto power by next of kin over the previously expressed decisions of the patient. Thus the requirement that the termination of treatment be dependent on the consent of the patient's next of kin or legal guardian was to be eliminated. Second, the purview of the Act would be expanded beyond terminal illness to include permanent unconsciousness. Third, artificial nutrition and hydration would be considered a "life support system" and thereby be susceptible to withdrawal under the terms of the statute. Fourth, there would be the inclusion of a "clear and convincing" evidentiary standard to demonstrate the wishes of the patient, as elaborated in *Cruzan*.

The amendment's central feature was the guarantee of immunity for physicians as in the original Act. A three-pronged test was established to set the conditions for this immunity:

1. The decision to withdraw life-sustaining therapy must be based on the best medical judgment of the physician in accordance with customary standards of care;
2a. The patient must be deemed either terminally ill or permanently unconscious;
2b. A diagnosis of permanent unconsciousness must be made by a physician competent to make a neurological diagnosis;
3. There must be a determination of the patient's wishes by clear and convincing evidence (whether by a living will or previous communications by the patient to a physician, family or any other person).

Law and Medicine: An Awkward Pair

Another amendment, "C," was debated by the legislature on the same occasion. The amendment would have stipulated a three-month waiting period before a diagnosis of permanent unconsciousness could be made. Rep. Dillon was the sponsor of this amendment which expressed her concern about the uncertainties surrounding the diagnosis of permanent unconsciousness. She maintained that financial pressures from insurers could wrongly hasten the time to diagnosis of permanent unconsciousness and thereby result in the deaths of individuals who were otherwise destined to recover consciousness. She favored a period of three months because it "was the point established by the neurologist in the public hearing as the point at which ... you could say with reasonable degree of certainty that an individual over 50 who had been comatose was probably in a persistent vegetative state."[38] In response to opposing members of the House she reminded them that there are regular reports of "people who continue to wake up even long after three or four months" and that predicting who those responders will be cannot be done with certainty;[39] she therefore emphasized the need for a bureaucratic safeguard in the midst of financial pressures and physician immunity.

But her concerns were challenged by those who thought that legislators had no business attempting to out-think a neurologist—referring to Dr. Jan Mashman, President of the Connecticut Neurological Society, who had written:

> I strongly object to the imposition of a three-month waiting period before I can diagnose a patient as being permanently unconscious and follow the patient's expressed wishes concerning the removal of life supports. Each patient's case must be evaluated individually based on a number of things, age, the injury, etc.[40]

There was the recurring conviction that the sort of neurological conditions under discussion were matters for medical determination, not legal stipulation. Rep. Lawlor criticized the amendment as inappropriate and confused since it gave the suggestion that all severely brain-damaged patients could be considered as a single category. Persistent vegetative state, he argued, was only one form of permanent unconsciousness,

> but there are other forms, more severe forms of coma and permanent unconsciousness which can be diagnosed virtually immediately and this is the classic brain dead form of unconsciousness where there's no activity, there's no reaction.... that is the type of diagnosis ... which would prevent the abiding by the patient's wishes if we adhere to this three-month standard and that is why Connecticut's neurologist [sic] and many of Connecticut's physicians have objected in the strongest terms to this type of arbitrary limit....[41]

Amendment "C" failed, 52 votes yea and 93 votes nay.

It should be noted that the American Medical Association (AMA), in 1990, the year before this Act was amended, published its position paper on the persistent vegetative state which concluded that permanent unconsciousness can be diagnosed reliably if an adult patient remains vegetative three months after diffuse anoxic brain injury or one year after closed head trauma.[42] This conclusion agrees with the recommendations of the Multi-Society Task Force (1994) mentioned at the beginning of this article. Had Rep. Dillon and her supporters relied on the AMA's guidelines to secure a legal safeguard solely for patients in PVS their arguments may have been more persuasive.

A Test of the Law: A Connecticut Patient in the Persistent Vegetative State

A man was found lying on the floor, unresponsive. Emergency medical evaluation discovered him to be cyanotic, without respirations or pulse, in electromechanical dissociation by cardiac monitoring. Advanced cardiac life support was administered and within five minutes the patient's pulse was palpable and monitoring revealed normal sinus rhythm. After transfer to the emergency department the patient was noted to be comatose with absent brainstem and deep tendon reflexes; spontaneous respirations were present. The head computed tomographic scan was normal, but the urine toxicology screen was positive. There was generalized slowing without seizure activity by electroencephalography.

Within 24 hours deep tendon and cranial nerve reflexes had returned, and the neurologist's impression was of coma secondary to drug overdose and hypoxic encephalopathy. By the fourth day of hospitalization the patient, still comatose, was transferred out of the intensive care unit. After discussion between the medical team and the patient's family it was decided that the patient's code status would be "CODE C" (there would be no cardiopulmonary resuscitation, no tube feeding, no blood transfusions, no blood draws, no vasopressor agents administered; antibiotics and intravenous fluids could be used). The patient's family was confident that he would not have wanted extensive futile life support measures.

Unexpectedly, on the sixth hospital day the patient's condition improved; he opened his eyes when spoken to, moaned intermittently, and appeared to move his arms and legs to command. Because of this improvement, his code status was upgraded to "CODE B," allowing artificial nutrition, blood transfusions, and blood draws, but still prohibiting cardiopulmonary resuscitation. By the ninth hospital day the patient remained awake but showed no intelligible verbal or motor response to verbal commands; his nurses remarked upon his continuous moaning and intermittent inarticulate outbursts. Peripheral parenteral nutrition was begun.

The consulting neurologist described the patient as awake with spontaneous movement of the extremities, showing dystonic posturing and hyperreflexia. In his opinion it was too early to determine an ultimate prognosis; he therefore recommended that the patient continue to receive aggressive nursing and nutritional care. Despite this recommendation, the patient's family requested that nutritional support be discontinued and that only comfort measures be maintained. Caught between the recommendations of the consulting neurologist and the family's request to withdraw therapy, the attending physician sought legal counsel. A hospital lawyer explained to him that there was an obligation to provide support, including nutrition, while the patient remained capable of neurological improvement.

On the 21st hospital day a second neurologist examined the patient and expressed his opinion that an ultimate outcome could not be predicted, and, given the modest improvement already made, it should not be concluded that the patient had irreversible central nervous system damage. While he suspected the patient would show only very slow signs of progress he was in agreement with the first neurologist's assessment. Meanwhile efforts were undertaken to locate a long-term care facility which would be willing to accept the patient. However, the patient's nonterminal prognosis precluded referral to a local hospice, and his lack of an enteral route of feeding and hydration precluded transfer to two local rehabilitative centers.

On the 30th hospital day the hospital ethics committee met with the patient's family and both his medical condition and Connecticut state law were explained and discussed. The committee asked the family for permission to place a percutaneous endoscopic gastrostomy tube (PEG), but the family remained strongly opposed to further interventional treatment, including nutritional support. The hospital then sought, and received, a court order for the placement of a PEG.

Within 24 hours of the gastrostomy tube's placement, the patient developed fever and tachycardia, and by the 54th hospital day blood cultures grew *S. aureus*. An intravenous antibiotic was begun. With the patient still febrile, though clinically stable, on the 56th hospital day the patient's condition was discussed with his family and his conservator, and a decision was made to change the patient's status to "CODE C"—comfort measures only. Enteral feeding was maintained via the PEG tube but the intravenous antibiotic was discontinued. The next day the patient was discharged to an extended care facility where fever persisted and hypotension developed. One day later he vomited, suffered respiratory distress, and died.

Case Discussion

Viewed within the scope of the current Removal of Life Support Systems Act, did the treatment of this patient satisfy the Act's three-pronged test? We may presume that the attending physician acted according to customary standards of care and had determined the wishes of the patient as communicated by his family and conservator, thus meeting the first and third requirements of the three-pronged test. However, the second requirement was not satisfied: two neurologists had refused to pronounce a diagnosis of permanent unconsciousness. Having failed to satisfy the total conditions of the Act there was no statutory justification to discontinue antibiotics in this case since intravenous antibiotics, like a gastrostomy tube, are forms of "beneficial medical treatment" and "life support" as defined by the statute.

If this patient's case were brought before the Connecticut Supreme Court how might they rule? I can see no way around the conclusion that the discontinuation of antibiotics in a patient who has not yet been diagnosed as permanently unconscious or terminally ill stands in partial contradiction to the guidelines of the statute. It appears, therefore, that the physician involved in this case would not be eligible for immunity under its terms. The court would be faced with what it deliberately side-stepped in *McConnell*—the question of the statute's exclusivity (that is, must *all* cases of withholding or withdrawing life support be judged exclusively under the statute's terms or can a case like the one presented here be judged outside of the statute according to rights to privacy and self-determination as put forward in *Foody*?). If the court agreed with the family, conservator and physician in this case, it would be forced to deny statutory claims to exclusivity and would have to defend the family's decision as the *Foody* court did. Such a strategy would be disconcerting to all who take statutory law seriously, especially after this State Supreme Court implicitly supported the statutory process by locating its ruling, in *McConnell*, within statutory terms (as it interpreted them). It seems that a case such as the one above could move the court to rule on the deeper questions of rights which it has thus far postponed, which

in turn could upset the apparent harmony on this matter that currently exists between our state's supreme court and legislature.

Conclusion

Connecticut's legal history concerning the withdrawal of life-sustaining medical therapy in the treatment of persons in PVS has been a bilateral engagement between the judicial and legislative branches of government. While the State Supreme Court decided to override the intent of the legislature in *McConnell*, the legislature's subsequent decision to conform its statute to the will of the court suggests an admission that the original legislation was deficient or that there was a reluctance to challenge the court's authority, or both. Despite its present harmony with the legislature, the Court has not resolved the deeper constitutional issue of individual rights in cases which do not satisfy the conditions required by the three-pronged test in the Removal of Life Support Systems Act. Perhaps such resolution will come only after further legal challenge over the rights of incompetent persons (through their surrogates) to refuse medical interventions in cases where neither the diagnosis of terminal disease nor permanent unconsciousness can be made. Alternatively, the legislature could choose to amend the Act in order to preempt another clash with the court. Whatever ensues there is likely to be disagreement about the comparative institutional competence of each branch of government in the establishment of new law.

In the midst of the diagnostic and prognostic uncertainties surrounding PVS, the desire for more specific legal safeguards is understandable. Rep. Dillon's failed attempt to secure a three-month waiting period before a diagnosis of permanent unconsciousness can be made may have failed because of its sweeping scope. Had it been restricted to PVS it may have been a more credible proposition. However reasonable the desire for safeguards may be, there remains a question of professional jurisdiction which queries whether diagnoses (in contrast to decisions) should ever be constrained by legal regulation.

The role of liability is central to this discussion about the limitation of treatment in PVS. The major purpose of the Removal of Life Support Systems Act is to provide immunity to physicians who withdraw life-sustaining treatments from terminally ill or permanently unconscious patients. Decisions to withdraw life-sustaining treatments from patients who do not fall under the terms of the statute leave the physician open to legal scrutiny and potential prosecution. While less restrictive legal requirements would appeal to those who favor the rights of individuals and their families to make medical decisions without being confined by the requirements set down in Connecticut's statute, perhaps it is not necessary for the law to account for every possible medical situation that arises. It may be enough that there are laws that specify a narrow range of conditions under which immunity is guaranteed without prospectively passing judgment on cases that lie outside of that range. The lingering threat of liability in outlying cases would exert a pressure to err on the side of preserving human life irrespective of its "quality." Exceptions to the specified conditions would have to be justified individually; physicians choosing to make these exceptions would have to be prepared to justify them before a court of law. This kind of approach would express a societal will to "impose an extraordinary burden of caretaking" on physicians whose role it is to dispense life and death.[43]

It is important to note that the U.S. Supreme Court, in *Cruzan*, recognized a state's prerogative to take an unqualified interest in the preservation of human life—in opposition to those who would prefer to rely on quality-of-life determinations in cases of PVS. While it may be argued that the doctrine of the sanctity of life is but a defunct relic of a Judeo-Christian past, and that we should give full honor to the reasoned injunctions founded on quality of life determinations,[44] for now the highest court in the land has ruled that a state may lawfully choose to fashion its mandates without giving absolute priority to quality-of-life determinations in cases of incapacitation.

Lastly, there is much to be gleaned from this history that is relevant to current discussions about physician-assisted suicide. Until very recently physician-assisted suicide was illegal throughout the United States. However, as a result of Second and Ninth Circuit Court decisions earlier this year, physician-assisted suicide to end the lives of consenting, competent adults who are terminally ill has now, in these circuits, received support by the second highest level of judicial authority in the country (Connecticut is under the jurisdiction of the Second Circuit). Constitutional justification for these decisions was found in the Due Process (Ninth Circuit)[45] and Equal Protection (Second Circuit)[46] Clauses of the Fourteenth Amendment. These decisions address the practice of assisted-suicide, whereas *Foody* and *McConnell* pertain to the limitation of life support in PVS, but the rationale advanced by the Circuit Courts relates directly to the cases under discussion here and points out an important contrast. Both *Foody* and *McConnell* relied significantly on the distinction between passive and active interventions and on the difference between killing oneself and being allowed to die of "natural causes." Such reasons were put forward in order to defeat the objection that the withdrawal of life-sustaining treatment constituted a suicide. Precisely these distinctions—the passive-active distinction and the concept of "natural causes"—are therefore part of the focus of disagreement in the debate over assisted suicide. It is no

coincidence that in its argument for assisted-suicide the Second Circuit Court rejected these distinctions entirely, holding that the passive-active distinction is irrelevant and that withdrawal of life support results in a death which is no more natural than that caused by assisted-suicide. If the State of Connecticut ever decides to enact a statute that allows for physician-assisted suicide—assuming it follows the precedent of the Second Circuit Court by adopting a consequentialist view of death which disregards active-passive distinctions and abandons a notion of "natural causes"—it will require a radical departure from the reasoning in the established case law of its highest court.

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CSMS Produces A Guide to Health Plans

The Connecticut State Medical Society's Committee on Public Affairs is pleased to announce the availability of the Connecticut State Medical Society's, **Which Health Insurance is Right For You? A Guide to Help You Compare Health Plans.** The brochure provides a general overview of traditional indemnity and managed care plans; what to look for when purchasing a health care plan; and a checklist for evaluating plans.

The brochure and order form to request copies for your patient waiting areas has been mailed. In addition to asking you to distribute these informative guides in your office, the Society sent them to all the Connecticut legislators, libraries, hospitals, and senior centers statewide.

Commentary

"A Sacred Cow Feeding the Public a Steady Line of Bull"

The publication in the *Hartford Courant* of the financial rewards resulting from the $8.8 billion Aetna-U. S. Healthcare marriage ("Aetna takeover means big money for top U.S. Healthcare officials," 14 June) is anything but joyous and optimistic news except for the marriage brokers involved in this corporate miscegenation. A few of the matchmakers in this deal include the former druggist, Leonard Abramson, who heads U.S. Healthcare and who will pocket some one billion dollars and even a once defamed Aetna lawyer, Zoe Baird, who will be rewarded with almost one million for doing what should have been her job. Also involved in the lucrative nuptials were several "best men," a few of whom will be terminated but with very munificent compensations.

Unfortunately there will be many more Aetna people who will not share in this health-care pillage. Hundreds will be dismissed and many others may be forced to emigrate to U.S. Healthcare's headquarters in Pennsylvania. The members of U.S. Healthcare and, presumably, Aetna health plans cannot expect to receive more than barebone coverage,

Considering the cost, how many more children could have been immunized, how many more women would have received prenatal care, and how many more of the infirm could have purchased their medications had the billions exchanged in this corporate orgy been used to promote better health instead of further enriching these already overpaid insurance executives?

For over a decade the health-care providers, hospitals, and doctors, have been denounced as greedy, dishonest, and incompetent by the health insurance industry and the politicians along with their inept friends in the news media. Each wrong by a minority of the more than 600,000 physicians in this country was proclaimed as proof of the profession's avarice. This small percentage of doctors was accused of stealing thousands of health-care dollars.

Meanwhile HMOs, health insurance carriers, and corporate clinical laboratories were committing million dollar fraud. As an example, this past April, Blue Shield of Northern California was fined $1.5 million by Medicare for falsifying claims. The news was buried on the back pages of the business section in most newspapers. But then what is a million dollars when a company has billions in assets?

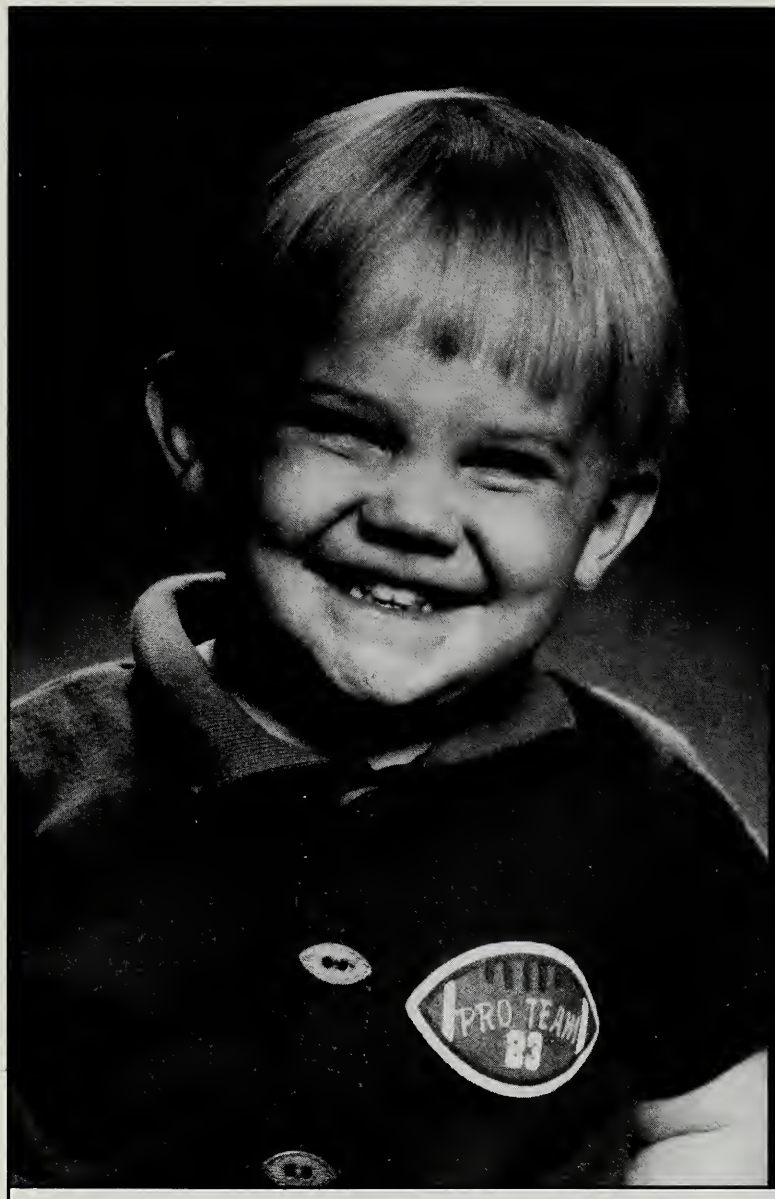
All across this country health insurance companies are forging mergers involving sums of money the average citizen can barely comprehend. Many of the players in this medical monopoly are classified as "nonprofit organizations." A sick joke (pun intended!). For example so much money is involved in the proposed conversion of California Blue Cross to a for-profit company that state regulators forced it to "donate" $3.3 billion to two charitable foundations (and this was supposed to have been a nonprofit operations!).

The tentative merger of Columbia-HCA Healthcare with Ohio Blue Cross-Blue Shield will result in a $19 million windfall for the latter's top executives. With more than 500 managed care corporations in the United States this same scenario is being repeated from New Jersey to Texas. Members of these health-care plans are being traded like porkbellies on the stock exchange.

Twenty years ago Ralph Nader called the insurance industry "a sacred cow feeding the public a steady line of bull." More accurately it is a cash cow. It offers no tangible service and no product. Rather it skims money from hospitals and physicians, the real care givers, creating obscene profits for its executives and stockholders. Jean Geroudoux, the industrialist, best described the situation: "Little by little these (corporate) pimps have taken over. They don't do anything and they manufacture nothing. They just stand there and take their cut." And what a cut it is.

Lee Sataline, M.D.
Cheshire

Reprinted with permission from the *Hartford Courant Friday*, 5 July 1996.



A is for Apple,

B is for Ball,

C is for Cancer.

Cancer?

Each year, more than 6,000 children like Adam learn all about cancer and other catastrophic illnesses when they're stricken with deadly diseases. Fortunately, these children have a fighting chance at surviving cancer — the No. 1 killer disease of children — because of strides St. Jude doctors and scientists are making every day in treatment and research. With your support, St. Jude Children's Research Hospital is helping children all over the world live.

To find out more about St. Jude's life-saving work, write to:

St. Jude Hospital • P.O. Box 3704, Dept. DA • Memphis, TN 38103, or call:

1-800-877-5833

ST. JUDE CHILDREN'S RESEARCH HOSPITAL
***Danny Thomas**, Founder*

50 Years Ago

From *The Connecticut State Medical Journal*

August 1946

Doctor—

INFORM YOUR PATIENTS !

WE CONNECTICUT PHYSICIANS BELIEVE ...

"Throughout infancy, the child should have PROPER ATTENTION, INCLUDING *Scientific Nutrition*

*Immunization Against Preventable Diseases, Other Services Included in Infant Welfare."**

Such services may be supplied ... through personal contact between the mother and the individual physician ... or through child care and infant welfare stations administered under LOCAL auspices with support by tax funds whenever the need can be shown.

IN CONNECTICUT ... preventive medical service such as immunization of the child, and health education of the child and parents are provided by a competent health department ... and for those desiring private care, by competent private physicians. Also, curative services of a high order are generally available throughout the STATE.

WE CONNECTICUT PHYSICIANS WISH TO MAKE SURE THAT NO CHILD IS NEGLECTED, BUT WE DO NOT WISH TO CREATE A FALSE APPETITE FOR UNEEDED MEDICAL ATTENTION. WE WISH TO MAKE THE CHILD, AND LATER, THE ADULT, ABLE TO CARE FOR HIMSELF WITHOUT UNDUE DEPENDENCE UPON THE PHYSICIAN.

COMMON-SENSE HEALTH PROGRAM

Adopted Feb. 14, 1946 by the Trustees and the
Council on Medical Service of the American Medical Association

[1]High Standard of Living
[2]Preventive Medical Services
[3]Adequate Maternity Care
*Adequate Infant and Child Care
Research In The Medical Sciences
Widespread Health Education
Extension of Voluntary Prepaid Medical and Hospital Care Plans
Health and Diagnostic Centers and Hospitals
Adequate Medical and Hospital Care For The Veteran
Proper Development of National Philanthropic Health Agencies

See Connecticut State Medical Journal, [1]May, page 434; [2]June, page 497; [3]July, page 591

If *free enterprise in American medicine* is to endure, each member of the State Medical Society must feel his public relations responsibility. He must learn the dangers which threaten society, and each day, each member must do some educational work with his patients. Next month's Journal will deal with Research In the Medical Sciences in our "Common-Sense Health Program."

Reprinted from the *Connecticut State Medical Journal*, August 1946.

The shape of things to come.

Now you can confirm your patient's insurance eligibility and coverage information in just seconds.

With EasyClaim Plus, a new service from the Connecticut Health Information Network (CT/HIN), you get quick access to important patient information. All it takes is the touch of a few buttons, and in seconds, you'll have a printed record for your patient's files

With EasyClaim Plus you can:

- **Improve profitability...** eliminate claim denial
- **Increase efficiency...**quick and easy verification
- **Maximize productivity...**reduce payment collection tasks.

And you'll have access to Blue Cross & Blue Shield of Connecticut, Constitution HealthCare, BlueCare Family Plan and Medicaid databases.

EasyClaim Plus can also be used for credit and debit card verification.

To see how EasyClaim Plus can help keep your practice in shape, call 1-800-922-3385.

ProMed
SYSTEMS INCORPORATED

Violence and the Media

During a recent two week period I admitted four patients to the hospital with either a stab wound or gunshot wound. One patient was shot in the leg because of an argument during a basketball game.

As physicians we witness first hand not just the immediate effects of a violent act—often taking the victim to the operating room for emergency surgery—but also the effects to patients long afterward with limps from leg wounds or shortness of breath from heart and chest wounds. The victim's family also suffers for years to come. The cost to society is astronomic both financially and in lost productivity of its young citizens.

Everything must be done to stop this very real carnage. Physicians as concerned citizens can and must take action.

Violence is a major medical and public health issue. Violence in general is a partially avoidable public health problem. The depiction of violent behavior on television and the movies contributes to the escalation of violence in our communities. As long ago as 1976, the American Medical Association adopted a policy statement that declared that TV violence threatens the health and welfare of young Americans. The AMA encouraged opposition to TV programs containing violence.

Local, state, and national pressure concerning the effects of violent TV programs on the young has led the TV industry to begin a policy of program ratings similar to movie ratings. The V-chip or violence chip will be placed in all new TV sets sold after early 1998. This chip will allow parents to block out TV programs with high violence ratings to prevent their young children from seeing these unsuitable programs. Senator Joseph Lieberman has been influential in promoting this highly admirable program and President Clinton has applauded it. The V-chip and TV program ratings do not represent censorship but rather give parents the opportunity to decide which TV programs may come into their homes and which ones their children may watch.

Other antiviolent efforts and groups are combatting excessive media violence. As concerned physicians, the Connecticut State Medical Society's Committee on Public Health spearheaded by Dr. Benjamin Gordon organized a concerted effort among other professional groups to increase public awareness that media violence is a risk factor to children. Working with Jerome and Dorothy Singer, codirectors of the Yale Family Television and Research Center, the Connecticut State Medical Society and 12 professional organizations, representing physicians, teachers, parents, psychologists, dentists, and social workers, developed a position statement aimed at encouraging the public to make a personal committment to themselves, their children, and the community to turn off the violence.

This group is called the Consensus of Professions and represents a strong, unified voice objecting to images of violence undermining the healthy development of children. The Consensus of Professions refuses to watch or allow children to watch programs with unnecessary violence and is withdrawing support for those companies that sponsor programs with excessive violent content. This collaboration has resulted in thousands of position statements distributed statewide for signature. The Connecticut State Medical Society continues to receive signatures from all over the state. These signatures will be forwarded to local television station managers, cable companies, and corporate sponsors urging them to act in a responsible manner by replacing violent programs with age-appropriate positive programming.

The Connecticut State Medical Society and the Consensus of Professions would like to urge all physicians to voice their concern about the damaging role television violence plays in the healthy development of our children and society. The position statement in the November 1995 issue of *Connecticut Medicine* (pp 673-7) may be photocopied and circulated in your office and community. The signatures obtained should be forwarded to the Connecticut State Medical Society to make our unified voice louder and stronger.

There is something we can do about violence in the media and in our society and we can do it today, right now!

Michael M. Deren, M.D.
President

M.D. Health Plan has been through many changes in the past year. The merger with Health Systems International has allowed us many new and exciting opportunities, including a Personal Medical Management System:

"the right service by the right provider at the right time."

Nothing should stand between *you* and your *patients*

We know that the relationship between physician and patient is the most important. As an HMO, our responsibility is to be a resource to those relationships, working closely with our physicians to assist in the direction of patient care in the most efficient way possible while focusing on high quality. Outcome is still the best measure of our success, not the bottom dollar. Just doing the right thing will always be the most cost effective.

It's also important to know that the CSMS–IPA remains *separate* from the HMO and is owned by the Connecticut State Medical Society.

M.D. HEALTH PLAN

6 Devine Street, North Haven, CT 06473 (800)772-5869 (203)230-1000

How Much Life Extension Can We Stand?

ROBERT U. MASSEY, M.D.

The days of our years are threescore years and ten; and if by reason of strength they be fourscore years, yet is their strength labour and sorrow; for it is soon cut off, and we fly away. *Psalm 90:10.*

IN 1993, for the first time in years, life expectancy fell in the United States, but the fall was tiny and could hardly be the beginning of a trend. Until relatively recently, life expectancy increased because of declining infant and childhood mortality. Now the increases are largely at the other end, with the over 85 crowd growing fast. Their numbers are expected to triple to almost nine million by 2030. By that year, when the oldest Boomers will be 84, the elderly, those over 65, will make up 20% of our population. According to one estimate, the 65-and-over group in 2040 will total 127.5 million, equal to the population of the entire country in the 1930s. Recently *Science* (5 July 1996) devoted its news section to "Horizons on Aging," and painted anything but a cheering demographic picture, not only for the United States but for the entire planet. Implications for Medicare and Social Security, and their analogs in other developed nations, are frightening. Social democracies like Germany are already feeling generational hostility.

Research into the many factors making up the aging process: heredity, genetics, nutrition, stress, immune function, endocrine system malfunction, and changes in connective tissue, continue to be intellectually rewarding. Distinguished and prudent investigators, however, have more than once informally whispered that such research ought never to be funded! Or the results never accepted for publication or, if published, never put to use. Publicly such sentiments are rarely given voice, but there is among thoughtful bioscientists a kind of ethical unease, a primordial fear that too much knowledge may lead to too much power and ultimately to our undoing.

I recently reread some of the papers in an 18-year-old issue of *Daedalus* whose authors were distinguished leaders in that decade in the biological sciences, in technology, and in the history, ethics, and sociology of science. The Spring 1978 issue was called "Limits of Scientific Inquiry," and the editor felt the time was "propitious for a more objective inquiry" into a concept that would have been unthinkable 20, or even 10, years before.

Research on aging came in for more worried comment than most other endeavors. The year before (*Daedalus* Winter 1977) Daniel Callahan had asked, "If death can be forestalled, for how long and in what circumstances should it be?" Robert Sinsheimer listed three areas of research that he considered of dubious merit; one was research on the aging process. "... on a finite planet extended individual life must restrict the production of new individuals and that renewal which provides the vitality of our species." Robert S. Morison admitted that, dubious or not, such research is unlikely to be limited:

> The love of life is so thoroughly built into us that at first glance it seems impossible for any substantial fraction of the human race to want anything else but its dubious extension....
>
> Our main point is that the very universality of appeal that makes life-extension so patently disruptive and amply justifies the concerns so far expressed, at the same time renders it immune from social control by limiting research on the aging process or banning the development of the consequent technologies.

Social control is an even more frightening concept now than it was 18 years ago. Getting permission for research from busybody committees or arrogant bureaucrats who know little about how science works evokes bad dreams of the Thought Police.

But what about cultural restraint? When Morison wrote those lines he was a visiting professor at M.I.T. and 72 years old. It seems to me that since 1978 there has been more openness about death and the preparation for death as the acceptable final chapter in life, due to arrive sometime during the decade or so after the psalmist's "three score and ten," or sooner if the burden of illness or pain should become too heavy to bear. Daniel Callahan's *Setting Limits* started us talking seriously about that. I hear more talk of restraint in using life extending technologies when a full life has been lived. Perhaps I have listened to a nonrepresentative group of men and women, but they belong mostly to the crowd that sets the tone for society as whole; the idea of limits just might return to a culture used to thinking that death is an option.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

This Month's Reading in Review

TIMOTHY B. NORBECK

The Connecticut Supreme Court dealt a setback to CIGNA HealthCare in a ruling that may strengthen attempts to regulate managed-care companies.... The ruling revives a state law that requires health plans to provide the state with a list of all plan doctors along with the standards used to choose or deselect them.... It also revives a 1994 case against CIGNA which Hartford Superior Court judge Jon Blue threw out in December of that year, claiming that ERISA preempted state regulatory efforts.... State Attorney General Richard Blumenthal said that the ruling "boldly affirms the power of the state to regulate managed-care companies and to protect consumers."

Hartford Courant (11 July 1996)

NOTE: The Connecticut State Medical Society and AMA filed an AMICUS brief on behalf of the physicians and patients in this case and provided other help as well.

"The managed-care horror stories are piling up. No one should be surprised. Who doubted for even the merest moment that financial incentives to deny medical treatment would result in the widespread denial of medical treatment. To a frightening extent, the practice of medicine has already been hijacked by inflexible, cold-hearted corporate types whose interests are in profits, not patients... The entire phenomenon of managed care needs an airing. The windows need to be opened and the spotlight shone all around. If ever there was a subject fit for televised Congressional hearings..."

Columnist Bob Herbert in the *New York Times* (15 July 1996)

According to a new study published in *Business Week*, much of the decline in the U.S. savings rate can be tied to two factors: a shift in resources to the elderly and an increase in seniors' penchant to spend—especially on health care.... The report found that personal consumption of health care, including Medicare and Medicaid, has tripled over the past 40 years, from four percent of the net national product to almost 13%.... The report also found that much of the rise in consumption, which corresponds with the falling savings rate, is due to a redistribution of wealth from the young to the old in the form of Medicare, Medicaid, and Social Security.

Business Week (22 July 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

At the 11th International AIDS Conference in Vancouver, Canada, the South African Health Minister said that if current trends continue, the prevalence of AIDS in Africa will dramatically reduce life expectancies on the continent.... She predicted that by 2010, life expectancies are expected to fall from 66 years to 33 in Zambia, from 70 years to 40 in Zimbabwe, and from 59 years to 34 in Uganda.

Washington Post (8 July 1996)

A sedentary lifestyle is almost as dangerous to a person's health as smoking, according to a study on sports medicine published in *JAMA*.... Non-smoking men who were the least fit had a 52% greater chance of death than the most fit men who did not smoke, and a 15% greater chance of death than the most fit men who smoked.

Detroit News (17 July 1996)

The managed-care industry has come to recognize that medical savings accounts might threaten its growing control of American medicine by offering a more attractive alternative.... As a result, it has recently become a vigorous enemy of MSAs.... Every believer in competition will recognize that opposition for what it is: a special interest using government to limit rather than expand competition.

Milton Friedman, Nobel Prize winner in economics and Hoover Institution senior research fellow, in *Hoover Institution Newsletter* (June 1996)

Say What? "I think there is a world market for maybe five computers."

Tom Watson, chairman of IBM, 1943
Time (15 July 1996)

Half of all Americans oppose proposals to limit the use of advanced technology to keep terminally ill patients alive, according to the latest CNN/*Time* poll.

American Political Network (15 July 1996)

Only in (North) America: In sociologist Reginald Bibby's 1995 poll of a cross-section of Canadians, 76% of those asked to name Canada's greatest living person either responded, "No one comes to mind," or declined to answer.... More recently, Toronto's *Maclean's* magazine concluded that Canada's most famous person is Pamela Anderson Lee of Baywatch.

Toronto Star (12 June 1996)

Stewart King, M.D.
1923-1996

Dr. Stewart A. King died at his Darien home on Saturday, 25 May 1996, of complications from amyotrophic lateral sclerosis at the age of 72.

Dr. King was born in Bridgeport, 3 August 1923, the son of the late Dr. Louis Richard King and Sadie Schertz King. He was educated in Bridgeport public schools and at Harvard College, and he received his M.D. degree from the College of Physicians and Surgeons, Columbia University, in 1947.

He served in the U.S. Army in the Korean War as a member of the 8055 Mobile Army Surgical Hospital, and was the model for the character of "Duke Forrest" in both the book and movie "M*A*S*H."

Following his Army service, Dr. King completed his surgical training at the Veteran's Administration Hospital in West Haven, and he began his practice in Stamford in 1956. In 1973, he was named president of the board of trustees of the Stamford Medical Society, and the following year he was named president of the Stamford Hospital Medical Staff. In 1995, Dr. King was named as the first recipient of Stamford Hospital's Centennial Award, awarded to "a few living individuals ...." He was a diplomat of the American Board of Surgery and a member of the American College of Surgeons. In Darien he was a founding member of the Darien Homemakers Home Health Aid Service.

He was a member and past president of the Stamford Medical Society, a member of the Fairfield County Medical Association where he served as president from 1971 to 1972, the Connecticut State Medical Society where he served on numerous committees from 1964 to 1983, the American Medical Association, and the Connecticut Society of American Board Surgeons, as well as both the Stamford branch and the Connecticut division of the American Cancer Society.

Dr. King was the author of articles and research papers published in medical and surgical journals, the most recent in the June 1996 issue of *Connecticut Medicine*. As his ALS progressed over the past decade, he was able to continue to write (and design Christmas cards) on his specially equipped computer using his tongue.

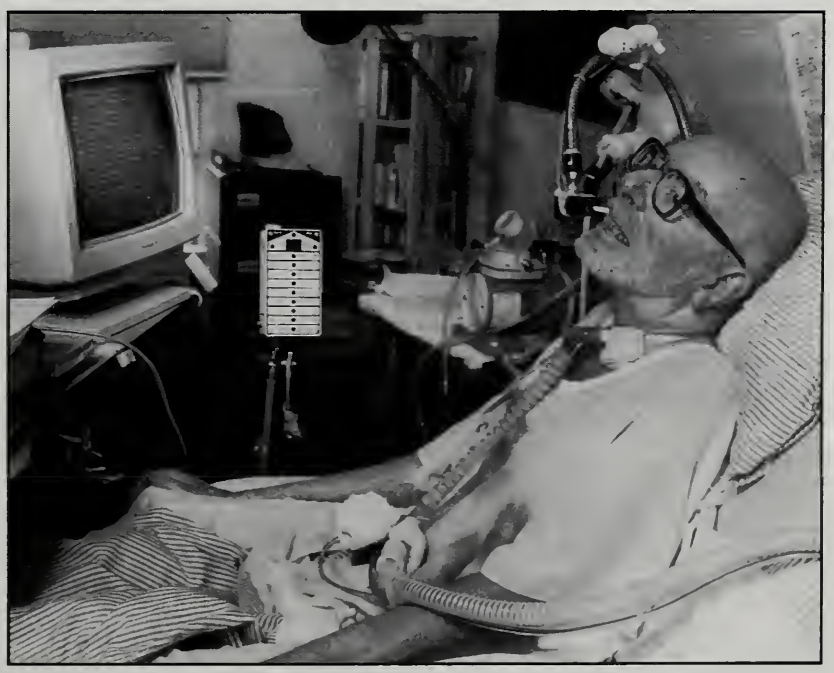
Dr. King is survived by his wife, Marilyn King of Darien; five children, Dr. David King of Belgrade, Montana; Meredith King O'Connor of Pacifica, California; John King of San Ramon, California; Dr. Alison King Miller of McGraw, New York; and Susan King McElrath of Riverdale, Maryland; a brother, Dr. John Richard King of Fairfield; and seven grandchildren.

A memorial service was held on Sunday, 26 May, at St. Luke's Episcopal Church in Darien.

The following article was taken from a feature story written by Locker McCarthy and published on 17 August 1995 in the *Darien News-Review*. Photo by Cathy Zuraw, courtesy *Darien News-Review*.

Dr. King Challenges Lou Gehrig's Disease

'We need more research and information'



Under the heading "Highlights" in his Harvard 50th reunion book, Darien's Dr. Stewart King colorfully sketched a life of manifold accomplishment as a family man and a successful surgeon—one whose time as a young, front-line doctor in the Korean War brought him a kind of immortality as the model for the irreverent "Duke Forrest" in the popular book and movie, "M*A*S*H."

But his world has become severely circumscribed. Although he listed only a single "Lowlight," it is the defining fact of his life now. "This damned disease," he wrote from his bed, using one of the only parts of his body that he can still move: his tongue.

Dr. King has amyotrophic lateral sclerosis, the progressive paralysis better known

as "Lou Gehrig's Disease," after the legendary Yankee first baseman who died of the illness in 1941 at the age of 39.

The former president of the Fairfield County Medical Association described as his "Highlights": "My wife and family. Medical school graduation. Korea and the MASH. Passing the surgical boards. The faith, trust, and respect my patients demonstrated by letting me operate on them, and the same attributes my colleagues evidenced in electing me to the many offices in which I served. Trips to Tokyo, the Far East, Florence and northern Italy, (to) Buenos Aires and South America (and) to Kenya. Having papers accepted for publication. Winning First in Division, First in Fleet on the Stamford Yacht Club cruise in '85 with my wife and daughter Alison as crew."

His sailing triumphs took place just after the ALS was diagnosed. Dr. King tells the story: "I was engaged in the private practice of general surgery in Stamford when, in September of 1984, at the age of 61, I began to notice difficulty closing clamps with my dominant right hand. There was steady progression of the weakness which was initially attributed to torn ligaments (in) the right thumb—a chronic problem stemming from a childhood injury. By December it was apparent that there was significant atrophy of all the intrinsic muscles of the right hand...."

The ALS was confirmed in the spring of 1985, and Dr. King retired from surgical practice in June of that year. From then until the end of 1987, the disease crept through his body. He was able to operate a wheelchair, until the loss of hand function was total. Then, in December of 1987, he had a tracheostomy and gastrostomy.

Dr. King says that being a physician gives him something of an advantage over other ALS patients. "I know more about the alternatives of medical care, and I'm not afraid to try different approaches," he says.

At his request, he underwent a 10-day regimen of the experimental drug IM Rocephin in late 1987 to early 1988. "There has been no significant progression of the ALS since," he says, but full-time home nursing care is necessary.

Dr. King retains use of his facial and neck muscles, and, with the aid of a "Trach-Talk" device, he is able to communicate verbally, with some interpretive assistance from Marilyn, his wife of 46 years. His mind is as sharp as ever, and he contributes articles and letters to many publications, as well as designing his family's Christmas cards.

The writing is hard work, because he has to use his tongue to select letters, numbers, punctuation, etc. from a video "key-board" on his computer (see photo, p109). But the suppleness of his prose belies his physical condition. This is Dr. King on "The Right to Die—An Individual's Perspective," published in *Connecticut Medicine* in its December 1993 issue:

> The prohibitions in the Hippocratic Oath against the giving of a deadly drug and against abortion may pose a problem for some in the profession. My response is that we all practice medicine in ways vastly different from 20 years ago, that today's practice would be almost incomprehensible to the practitioner of a century ago. In light of the immense changes in the society in which we live, and the explosion of medical knowledge which we find available, why should these ancient restrictions be regarded as cast in stone?

But he speaks of what he calls "mixed feelings" about the spate of suicides—many by ALS sufferers—assisted by Michigan's Dr. Jack Kevorkian, saying that he is not a clinician and lacks a "long-standing relationship or knowledge of these patients."

Nonetheless, Dr. King says he hopes that, if he feels his life has lost its meaning, a "caring physician" will "make the transition as easy as possible." But he adds, "We need more research and information on helping people to live with diseases as well as research into the causes and how to prevent the disease or slow up or stop its progression."

At his computer terminal, Dr. King stays abreast of as much as he can—his curiosity is unabated. And he does not limit his medical writing to ALS subjects. He has written about medical school teaching (he was a surgical instructor at the Yale School of Medicine after his Korean War duty with Hawkeye ["M*A*S*H author Richard Hooker]) and the need for pluralistic health insurance plans featuring employer-physician partnerships.

He also is on the Board of Directors of "Hear Our Voices!" a growing advocacy group for users of alternative and augmentative communication systems, and he writes for their newsletter, which takes as its motto a quote from Daniel Webster: "If all of my possessions were taken from me with one exception, I would choose the power of communication, for by it I would regain all the rest."

Whatever sense he had of what Thomas Mann called "the spoiled identity" of the very ill, Dr. King found renewal in the midst of his body's betrayal.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

Congratulations to Michael Deren

To the Editor: Congratulations to Michael Deren on his election to the presidency of the Connecticut State Medical Society and for his superb opening message to our colleagues. It is a call to action and a battle cry; certainly many battles have already been lost, but the WAR has not. There is still time to reform or restructure the system but it does take a unified action. Individually and divided we are no match for the HMOs. I'm 85, retired for 15 years, and can well remember when we fought the National Health Legislation proposed in the 50s and 60s by the Democratic regimes. We were there, but by apathy and a failure to unite in opposing the early days of management associations we lost our control of the delivery of medical care.

Blue Cross and Blue Shield at their inception were wonderful. They were not-for-profit, with administrative costs 5% to 7% and doctors accepting indemnity payments for those with reduced incomes. States could purchase such programs for their welfare patients and indigents.

Insurance for medical care was honorable and one could go to the doctor of their choice. And purchase as much or as little as may be needed. What was truly needed for all was catastrophe insurance and herein there may be a place for government assistance or national legislation. Today that need is still necessary.

I'm rambling so I must stop but the real purpose of this letter is to say, I'm glad Dr. Deren is in charge, and I like his challenges extended to the medical profession.

Charles E. Jacobson, Jr., M.D.

Manchester

Resolved: Managed Care Violates Medical Ethics

Managed care violates our right to privacy and our international human rights according to the proceedings of the XXVIth Council for International Organizations on Medical Sciences (C.I.O.M.S.) Conference which was held in Geneva, Switzerland, 5-7 February 1992 on the topic "Ethics and Research on Suman Subjects, International Guidelines." This document, which was published in 1993 and edited by Z. Bankowski and R. J. Levine (Professor at Yale University School of Medicine), indicated that there are a number of issues, including human experimentation (eg, Nazi research), informed consent, legal incapacity, decision making, and confidentiality that are human rights issues.

My particular issue is the confidentiality which is not only guaranteed by the Constitution of the United States under the rubric of the right to privacy, but the longstanding principle of medical ethics which makes doctor-patient communication a privileged and private matter.

There has been a wholesale violation of the right to privacy by the insurance industry and the managed-care industry. My fellow physicians, I believe, are culpable and cannot be relied upon to protect the standards which we had previously held sacred.

The Nuremberg Code in discussing research stated,

> The voluntary consent of the human subject is absolutely essential. This means that the person involved should have the legal capacity to give consent, to be so situated as to be able to exercise free power of choice, without intervention or any element of force, fraud, duress, overreaching, or other ulterior form of constraint or coercion; and to have sufficient knowledge and comprehension of the elements of the subject matter involved so as to enable him to make an understanding and enlightened decision.

In my opinion, the fraud, duress, and coercion elements are present when patients are sold an insurance policy without knowing that every word they exchange with their doctor may become subject to scrutiny by nonmedical persons for economic reasons, and that it certainly is coercion that they must sign away a fundamental human right in order to receive insurance.

Certainly, patients are free not to have insurance, but it is not a free choice to give up the right to privacy. The Bill of Rights in the Constitution states that there are certain inalienable rights which according to Webster means, "Incapable of being surrendered." The right to privacy in the Consitution derives from the fourth amendment, but the right to privacy in doctor-patient communication has a history that is ancient and predates the writing of the Constitution of the United States.

There are, of course, some rights that may not be given away and I believe that the populations forced into managed health care are what the international guidelines refers to as "Exploitable populations."

(continued on page 509)

From the Executive Director's Office

COUNCIL MEETING

Thursday, 13 June 1996

Attendance

Present, in addition to the Chairman, Dr. Joseph Czarsty, were Drs. Ahamed, Beck, Bigos, Bobruff, C. Czarsty, Deren, Eslami, Franklin, Freedman, Hollister, Kamens, Katz, Keating, McDonnell, Montegut, Mushlin, Redmond, Sadowski, Sosa, Tesoro, Timmerman, Watson, Wetstone, Wolfson, and Zeppieri.

Also present were: Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Norbeck, Ms. Schaffman, Mr. Staples, Mr. Sullivan (all CSMS staff), Mark Thompson, (FCMA staff), Ms. Camarco (HCMA staff), Ann Harney (NHCMA staff), and Dr. Parke.

Absent were: Dr. Brooks, Fischbein, Geary, Handleman, Herzog, Koplin, Lesnik, Narayanan, Scarpa, Schwartz, and Wesler.

Organizational Meeting

The organizational meeting of the Council for 1996-1997 was called to order by the president, Michael M. Deren, M.D. He stated that he looked forward to a productive, busy year for CSMS, the standard setter and the standard bearer for Connecticut's medical profession and its patients. He asked the help of the councilors in leading the medical society through the coming year. He encouraged all members of the Council to feel free to call him at any time. He commented that unity among all Connecticut physicians is our single most important function and as President believed his main function is to be sure that CSMS remains strong and united and that he could not do this without the help and cooperation of the Council. He welcomed the old and new councilors and asked them to introduce themselves. He then asked for nominations for chair and vice-chair of the Council for 1996-1997. It was VOTED to elect Joseph C. Czarsty, M.D., Oakville, chair, and Joseph S. Sadowski, M.D., Hartford, vice-chair.

Dr. Czarsty thanked the councilors for their continued support and stated that he would endeavor to keep the meetings running in a businesslike fashion.

Guest Speaker

Dr. Raymond Scalettar, special consultant liaison to physician organizations, Joint Commission on Accreditation of Healthcare Organizations, and former AMA trustee, who has held many distinguished posts in medical organizations, addressed the Council. He stated that in dealing with health-care reform some of the issues were still unresolved, such as cost, access, choice, portability, liability reform, and that all of these items were on the agenda as part of a health reform debate. The issue of quality is being addressed by the Joint Commission on Accreditation. The Joint Commission's mission is to improve the quality of care provided to the public through the provision of health-care accreditation and related services that support performance improvement in health care organizations. The focus is not only on quality but also value for a given cost. Dr. Scalettar discussed in detail the operation of the Joint Commission on Accreditation explaining that it is the largest most experienced accrediting body with capability to provide a top-to-bottom evaluation. The Joint Commission accredits more than 15,000 health-care organizations. Following his presentation, a question and answer period followed.

Reports of Related Organizations

CSMS/IPA: Dr. David D. Thompson, Jr., president of the CSMS/IPA, who was not able to be present, submitted a written report which included information on CSMS/IPA participation in the MD Health Plan's Medicare product that will be enrolling members beginning 1 January 1997. Participation in this program will be optional for physicians in the CSMS/IPA. He reported that they were working to eliminate all payments to in-state providers that are nonparticipating and trying to get all out-of-state providers who see MD Health Plan members to accept the fee schedule. Some utilization patterns that were at extreme variance with the norm were reported on and it was noted that they will be seeking an explanation for this utilization. It was VOTED to receive the report as information.

CPRO: Dr. Edward Kamens stated that he stayed in contact with the CPRO office and reported that CPRO is currently active in the outcome measures in the various diagnostic categories. He also announced that CPRO would be doing the quality over-sight for the Medicaid managed care program and that a contract will have to be agreed upon. The report was received as information.

Report of the President

Dr. Deren reported that in his brief five weeks as president he has learned that leading physicians is no easy task. He has been busy with various activities, as follows: attendance at the annual meeting of the Connecticut Bar Association, participation in a television interview on Channel 3 with representatives of the *Hartford Courant*, CBIA, and representative Anne MacDonald on the subject of managed care, and hosted and moderated a seminar on

"Sexual Misconduct and Other Boundary Issues: Considerations for Physicians," sponsored by CSMS and its Physician Health Program.

He mentioned increasing membership by promoting the Organized Medical Staff Section (OMSS) of the AMA. He believes each hospital and major organized group of physicians should be represented and if need be he plans to meet with the medical staffs and/or their presidents in the major Connecticut hospitals to emphasize the importance of the OMSS and other AMA activities

He reported that he has begun meeting with other health-care groups or their representatives including attorneys, nurses, dentists, pharmacists, and podiatrists to emphasize areas of mutual interest. He attended the annual meetings of Fairfield, New Haven, and New London County Medical Associations and plans to meet with each county president to improve communications. He also plans to attend many of the committee meetings.

He reported attending the meeting of the Physician Health Committee and working with the Physician Health Program. He stated that the Physician Health Program is an excellent program doing superlative work in the area of impaired physicians and that the Physician Health Committee should continue in its educational and advisory capacity. This was the original intent when the Physician Health Program was first organized and it should continue in this way operationally. The report was received as information.

He proposed two motions, one having to do with specialty society representation in the CSMS House of Delegates, and the other having to do with annual distinguished public service awards.

It was VOTED to refer the proposal of exploring the possibility of adding specialty society representatives to the House of Delegates to the Subcommittee to Study the Organization of the House of Medicine for study and report back to the Council with its recommendations.

It was VOTED to approve a motion that CSMS establish a Distinguished Public Service Award to a non-physician. The chairman of the Council appointed the following committee to establish the criteria for such an award to be presented to the Council for approval. Dr. Deren, Chair, Drs. Hollister, Keating, Timmerman, Wolfson, and Mr. Norbeck.

Report of the Executive Director

Mr. Norbeck reported on the following items of interest:

1. Two union-sponsored coalitions in California collected enough signatures to place a separate HMO regulatory initiative on the state ballot in November. They represent the most sweeping effort to date to counter the influence of HMOs. Both would ban financial incentives to doctors or nurses for delays or denying care, requiring second opinions before insurers can deny care recommended by doctors and prohibit gag orders in HMO contracts. Ralph Nader and California Nurses Association support one of the two propositions which would also place limits on premium increases for health insurance, impose fees on health-care mergers and hospital closures, prohibits HMOs from mandating out-of-court settlements for consumer grievances, and establish a non-profit consumer watchdog board to advocate on behalf of patients. Business and insurers in California, led by the California Chamber of Commerce, oppose the measure claiming they will drive-up medical costs and lead to excess government meddling in medical care.
2. The Kassebaum-Kennedy health insurance reform bill which would provide portability and help for those with preexisting illnesses, appears headed for oblivion. Senate majority leader Robert Dole left the Senate and it appears unlikely that anyone else can broker the deal. The Medical Savings Accounts (MSAs) are the sticking point. President Clinton won't accept them and the House majority leader, Dick Armey, won't give them up. Kassebaum and Kennedy have both rejected the Republican compromise offer which would allow business with more than 50 workers to offer MSAs to their employees. It appears that a proposal to offer MSAs to 50 or fewer employees beginning January 1997 and to a larger group three years later also will be rejected.
3. The AMA published a full page ad in the *Wall Street Journal* stating that "America needs health insurance reform, but unfair fraud and abuse laws need a second opinion." It was pointed out that physicians could go to jail for unintended paperwork mistakes. The AMA has been successful in the campaign in getting "knowing and willful" added to the bill. If the Kassebaum-Kennedy bill for health reform dies, so will the fraud and abuse section and that appears more than possible.
4. Mr. Norbeck suggested that it would be mutually beneficial if Connecticut Medical Insurance Company (CMIC) were officially asked to send a representative to the CSMS legislative meetings. It was VOTED to invite CMIC to send a representative to the legislative meetings.

Legislative Update

Dr. David W. Parke, chairman of the Committee on Legislation, reported that a comprehensive final legislative update on the major pieces of legislation of interest to CSMS, prepared by Sullivan & LeShane, the CSMS lobbyist, was distributed to all members of the Council.

He stated that despite great effort on the part of our lobbyists, CSMS staff, numerous CSMS members, and county medical associations, CSMS was in some respects victimized by unreasonable jockeying for political advantage by a small number of key legislators. He saw politics at its best and at its worst. Good politics was the awakening of the House leadership to the potential dangers to the public of SB 353, "An Act Concerning Optometry." Their deliberate and organized efforts to study the issues in an impartial manner and then their deliberate effort to defuse the optometric initiative in the public's interest were exemplary. The Connecticut Society of Eye Physicians, with the support of CSMS, rallied to work with the House leadership to reach a compromise with optometry, not all good, but certainly much more protective of medicine and patients. Politics was at its worst when less than 10% of the legislators, with key Senate leadership, ignored the unanimous vote of the House and failed to compromise or enact the most important aspects of managed-care reform and regulation.

He reported that CSMS has not been very potent politically. Whereas, individual optometrists, chiropractors, podiatrists, psychologists, etc. are very active in the political process both personally and financially, too many M.D.'s ignore the fact that a great deal of our future rests in legislative activity. He stated physicians must be involved in the political process both personally and financially and they must involve their patients in the legislative arena. A good start, he stated, was for each and every member to become a member of COMPAC and become personally involved in the political process including acquaintance with district legislators and political party leaders. He stated there is no doubt in his mind that legislators really want to see us and to hear from physicians and have high regard for medical doctors.

Dr. Parke reported that he is the sole physician appointee to a Work Group on Health Care Access for the Uninsured chaired by the state comptroller. The goal of the comptroller is to submit to legislative leadership by the end of October a plan that might address the problem without impacting on access for those presently insured. The report was received as information.

Physician Health Program

Michele Norbeck, Director of the Program, distributed to the Council a copy of the first annual report of the CSMS Physician Health Program which encompassed the period from 1 January 1995 to 30 April 1996. The report outlined many of the accomplishments of the program. The program was formed by CSMS with the intent of reducing duplication and overall costs, to speak with one voice in dealing with regulators and the public, to establish statewide program standards, to engage in proactive educational and prevention efforts, and to enhance the potential for funding a statewide program. She reported that they work closely with county medical associations' physician health committees, seeking their advice, guidance and collaboration to address issues of concern which impact on individual physician cases as well as on statewide policy matters. They have made educational presentations throughout the state at various hospitals and held seminars on the subject. She expressed appreciation to the Council for their support and guidance for the Physician Health Program. The report was received as information.

Dr. Sultan Ahamed, president of Connecticut Medical Insurance Company (CMIC), commended the Physician Health Program and presented a check to Dr. Deren for $44,450, which is the second installment of five to be made.

Physician Assisted Suicide

It was VOTED to endorse the following statement on "Physician Assisted Suicide" submitted by Dr. Deren:

> The Connecticut State Medical Society, like the American Medical Association, feels strongly that physician assisted suicide is against the Code of Medical Ethics and is incompatible with the physician's role as caregiver. This is despite the recent decision of the second U.S. Circuit Court of Appeals in New York.
>
> The Society supports the efforts of the American Medical Association better to educate physicians in treating physical pain and the psychological needs of patients at the end of life. With physicians providing greater support, comfort and adequate pain control, there would essentially be no need for euthanasia and assisted suicide.
>
> Physicians are obligated to relieve pain and suffering and to promote the dignity and autonomy of dying patients in their care. When it is clear that healing is no longer an option, the physician is faced with the difficult challenge of helping their patients and their families face death. Even if patients choose suicide over natural death, this must not be interpreted as a "right" to have their physicians assist them. The Connecticut State Medical Society supports greater reliance on Hospice and treatment of the psychological aspects of terminal illness which may help alleviate the suffering leading patients to seek assisted suicide.
>
> Physicians are healers, and their Hippocratic Oath prevents the taking of life. The physician's inability to prevent death does not give the right to take life."

Committee on Medical Aspects of Sports

At the subject committee's request, the following action was taken:

VOTED to endorse the Hezekiah Beardsley Chapter of the AAP's annual awards to recognize schools and teachers for innovative programs to involve all students in regular exercise.

VOTED to endorse the Physically Challenged Golf Association (PCGA) in its concept and mission, which was founded as a non-profit membership organization to motivate and involve the physically challenged in an outdoor sport to improve the quality of their life.

A recommendation that CSMS support licensure of Athletic Trainers when the bill comes up again in January was referred to the Committee on Legislation.

Dates of Future Council Meetings

Wednesday, 14 August 1996
Thursday, 3 October 1996
House of Delegates Meeting
Wednesday, 13 November1996

Letter to the Editor—continued from page 505

The Helsinki Declaration also stressed that informed consent is a prerequisite. To quote from the *International Guidelines*,

> The principles of obtaining consent and respect of special groups such as children, mentally retarded individuals, prisoners, and condemned criminals in developing countries are the same as in other parts of the world. In some situations, however, very poor and destitute individuals of socially underprivileged groups (eg, Pariahs, untouchables, migrants) may have to be considered as vulnerable groups with restricted freedom to make truly independent choices.

In my opinion, workers who can only get insurance through their company constitute a special group.

Therefore, I think it can be argued from the Nuremberg Code of 1947, the Universal Declaration of Human Rights sent out by the United Nations General Assembly in 1948, the 1966 International Covenant on Civil and Political Rights, and the Declaration of Helsinki (and others) plus the Constitution's Bill of Rights, that there are certain fundamental human rights which should not be sold. The principle of unacceptable recompense certainly applies to the amount of money passing hands in modern medical treatment which is the price of giving up the right to privacy.

I am not a lawyer (a fact which is probably clear as you read this letter), but I would like to enlist the aid of some legal scholar to try to safeguard confidentiality. Guideline 12 of the *International Guidelines* states,

> Patients in therapy relationships with their physicians have the right to expect that all information will be held in strict confidences disclosed only to those who need, or have a legal right to, the information, such as nurses and technicians to treat the patients.

This certainly does not apply to health-care managers or others whose interest is financial rather than the interest that every physician is legally and ethically obliged to uphold, ie, the best interest of the patient.

James R. Merikangas, M.D.
Woodbridge

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

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GENERAL PRACTICE

Position available for general practitioner with experience in emergency medicine, orthopedics and minor surgery, for medical center in Westport, Connecticut. Flexible hours, excellent salary and pleasant work environment. Please call or forward CV to: Anthony T. La Marca, M.D., 278 Post Road East, Westport, CT 06880, telephone (203) 454-1043.

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Connecticut Medicine

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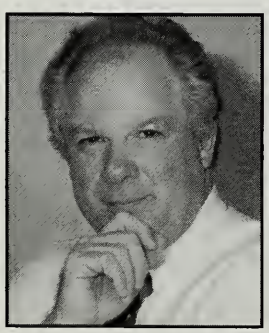

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A Case of Concurrent Presentation of Human Ehrlichiosis and Lyme Disease in Connecticut

FERMINA M. MAZZELLA, M.D., ANGELIE ROMAN, M.D., AND ALEJANDRA PEREZ, M.D.

ABSTRACT—This is a case of a long-term Connecticut resident who presented with both human granulocytic ehrlichiosis and Lyme disease. The etiologic agents and the probability of coinfection are discussed.

Case Report

History of present illness.—A 79-year-old female, long-term resident of Monroe, Connecticut, had been seen by her general practitioner the day prior to admission, complaining of weakness, fever, and disorientation as to time of two to three days' duration. She had not experienced headache, chills, neck pain, nausea, vomiting, diarrhea, or constipation, and denied seizures, pruritis, myalgia, joint pain, and photophobia. A course of doxycycline had been prescribed. However, the disorientation increased, and was accompanied by episodes of confusion. Therefore, the following day, she presented to the Danbury Hospital emergency department. She reported not having taken any other medications, specifically no aspirin or nonsteroidal antiinflammatory medications. Upon inquiry, she admitted sustaining a tick bite four to five weeks earlier, but had not noticed a rash.

Her past medical and family histories were noncontributory. She was an elderly, retired widow, who had not recently traveled, either within Connecticut or elsewhere. Her hobbies included gardening.

Physical Examination.—Her vital signs: core temperature 40.5° C, pulse 100 per minute, respiration 24 per minute, and blood pressure 110/70 mm Hg.

FERMINA M. MAZZELLA, M.D., Department of Pathology and Laboratory Medicine; ANGELIE ROMAN, M.D., Department of Medicine, Danbury Hospital, Danbury; ALEJANDRA PEREZ, M.D., Department of Medicine, Danbury Hospital, Danbury

Her physical examination revealed tachycardia with a grade II/VI systolic ejection murmur. Breath sounds were clear, bilaterally. The abdomen was soft and nontender, with no palpable masses or organomegaly. The patient was orientated as to person and place, but not to time. She displayed difficulty in word finding, and her speech was slow, with occasional slurring. There were no other neurological signs or nuchal rigidity. She had a petechial rash over the chest, abdomen, and back; there was no identifiable rash on the wrists or ankles. The site of the tick bite was identified on the left inner thigh. The bite showed some adjacent erythema, but was not pruritic. No evidence of erythema chronicum migrans was recognized.

Admission laboratory data.—Please refer to Tables 1-3.

Hospital Course.— A computed tomographic scan (CT) of the head was unremarkable. Blood cultures were taken, and revealed no growth. Lyme meningitis was suspected, and the patient was initially treated with intravenous ceftriaxone, and maintained on intravenous doxycycline. A second Lyme titer was drawn, and showed an index of 1.85. A Western immunoblot for both IgM and IgG serology was performed, which confirmed positivity (Fig. 2). Two days after admission, she reported feeling better. Her hemoglobin, hematocrit, and white blood cell count had continued to fall (Hgb 9.9, HCT 29, WBC 2,400, platelet count 15,000), however, her blood chemistry values began to normalize and the granulocytic inclusions were no longer recognized in the peripheral blood. Petechial hemorrhages were noted on her soft palate.

Platelets by weight were transfused. The plan was to keep her in the hospital until her platelet count had increased to an adequate level. Five days after admission, the blood cell count had improved and the platelet count

Table 1.—Hematologic Laboratory Values	
Variable	**Value**
Hemoglobin (g/dL)	11.6
Hematocrit (%)	34.8
Mean corpuscular volume (fL)	86
Mean corpuscular hemoglobin (pg)	28.8
Mean corpuscular hemoglobin concentration (g/dL)	33.4
Red cell distribution width (%)	14.5
White blood cells (per mm^3)	4,600
Differential count (%)	
Neutrophils	73
Band Neutrophils	16
Lymphocytes	4
Monocytes	6
Eosinophils	0
Basophils	1
Platelet count (per mm^3)	35,000
Erythrocyte sedimentation rate (mm/hr)	49
International normalized ratio*	1.06
Activated partial thromboplastin time (sec)	26.5
Fibrinogen (mg/dL)	431
Thrombin time (sec)	6.0
Fibrinolysis	negative
Fibrin degradation products (mg/mL)	>40

$$*\text{INR} = \left\{\frac{\text{patient's prothrombin time}}{\text{mean normal prothrombin time}}\right\}^{\text{(International Sensitivity Index)}}$$

Blood smear review: granulocytic inclusions consistent with ehrlichiosis (see Fig. 1)

Table 2.—Blood Chemistry Findings	
Variable	**Value**
Sodium (mEq/dL)	132
Potassium (mEq/dL)	4.4
Chloride (mEq/dL)	98
Bicarbonate (mEq/dL)	24
Anion Gap (mEg/dL)	10
Blood urea nitrogen (mg/dL)	36
Creatinine (mg/dL)	1.3
Glucose (mg/dL)	97
Total calcium (mg/dL)	7.9
Ionized calcium (mg/dL)	4.84
Phosphorus (mg/dL)	2.3
Magnesium (mEq/L)	1.8
Total bilirubin (mg/dL)	0.9
Alkaline phosphatase (U/I)	51
Aspartate aminotransferase (U/I)	54
Iron (ug/dL)	20
Total iron binding capacity (ug/dL)	188
Ferritin (ng/mL)	3998
Drug screen	negative
Lyme index (>1.05 reactive)	2.63

Table 3.—Blood Gases	
Variable	**Value**
pH	7.51
pCO_2 (mm Hg)	27
pO_2 (mm Hg)	72
HCO_3 (mEq/dL)	22
Sao_2 (%)	96.9

was 91,000. The soft palate petechiae had resolved. She was discharged home the following day, to be continued on oral doxycycline for 21 days.

Blood, collected the day after admission, was sent to the Connecticut Department of Public Health for Ehrlichia serology. These returned *E. chaffeensis* negative titers, and *E. equi* titers of 640 (>160 indicative of a recent infection). Convalescent titers, drawn three weeks after discharge showed *E. chaffeensis* negative titers, and *E. equi* titers of 320.

Discussion

The genus *Ehrlichia* comprises gram-negative rickettsiae, which are closely related to *Rickettsia* sp. As with *Rickettsia* sp. and a distantly related infectious agent, *Chlamydia* sp., these are intracellular organisms which exhibit a specific tissue tropism. In humans, these organisms selectively exist within intracytoplasmic, membrane-lined vacuoles of infected leukocytes. At the present time, three species appear to be clinically significant: *E. sennetsu*, *E. chaffeensis*, and *E. equi*.

Human infection by *Ehrlichia sennetsu* was first described in Japan in 1953. These patients present with an influenza-like illness, with associated generalized lymphadenopathy and hepatosplenomegaly. Laboratory findings include leukopenia with increased neutrophil levels during the acute phase, and both a relative and absolute increase in lymphocytes during the late febrile and convalescent periods. Erythrocyte and platelet counts are gener-

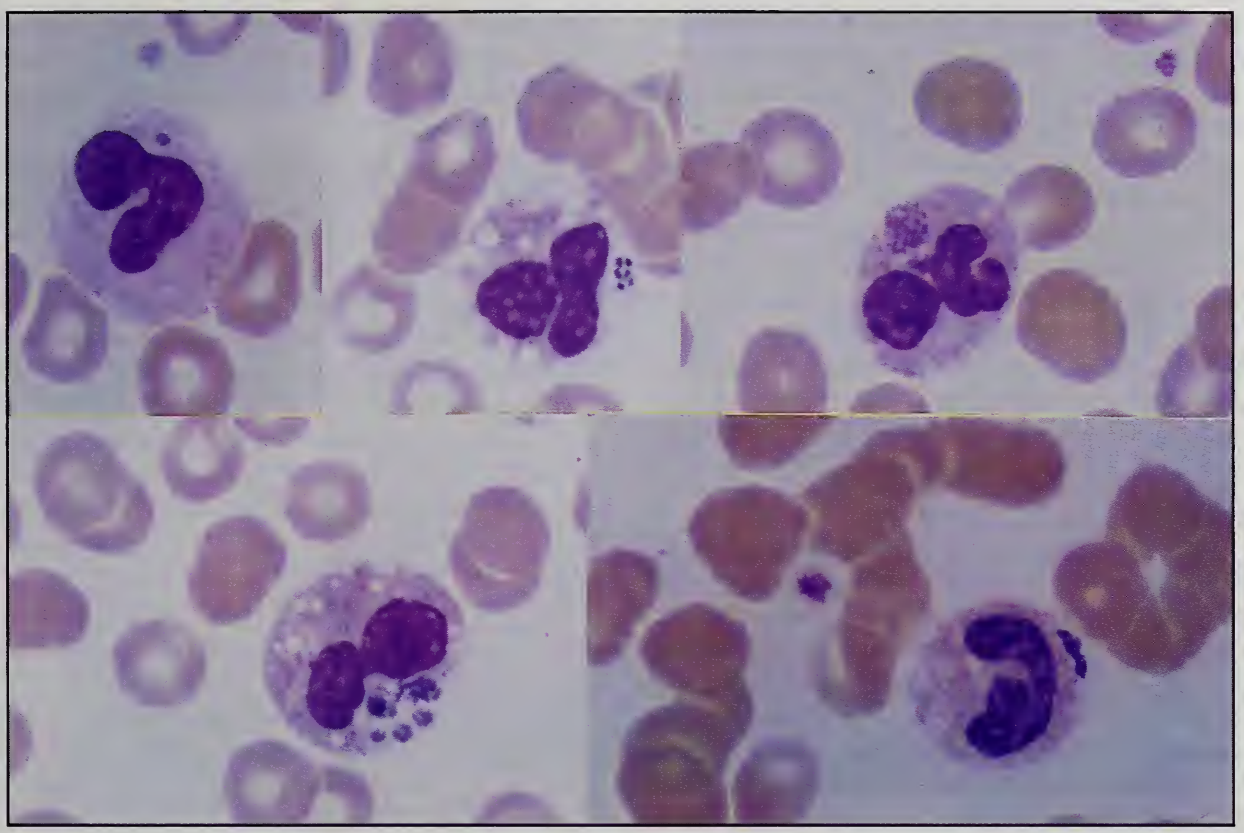

Figure 1.—Multiple forms of human granulocytic ehrlichiosis identified in the patient's peripheral blood smear, on the day of admission. (Wright's stain, 1000X, oil immersion). Top Left: "Elementary Body," Top Center: Morula,Top Right: Light, Large Form, Bottom Left: Advanced Morula, Bottom Right: Plaque Phase.

ally normal. The disease is self-limiting, and no fatalities have been reported. This disease seems to be restricted to Japan and the Malaysian peninsula.

Pathophysiologically, *E. sennetsu* appears to utilize *Stellantchasmus falcatus*, a fish parasite, as a vector. It is probably introduced into the human system by consumption of raw grey mullet. The organism selectively infects lymphocytes within lymph nodes. In monkeys, these nodes show diffuse proliferation of large, basophilic lymphatic cells, disappearance of follicles, and obscuring of the boundaries of the medullary cords and sinuses.[1]

Human infection in the United States was recently recognised in many south-central and south-eastern states, with the earliest reports dating to 1986. The infectious agents implicated at the present time are *E. chaffeensis* and *E. equi*. The disease process is serologically and clinically distinct from that caused by the Japanese strain. Clinically, infection may mimic Rocky Mountain spotted fever, with occasional fatalities having been reported. Patients present with influenza-like symptoms, accompanied by headaches and myalgia, with approximately 20% of patients displaying a rash. Unlike Rocky Mountain spotted fever, the distribution of the rash is more central, and does not involve the wrists and ankles. Rarely, patients may present with neurological symptoms.[2] Laboratory findings typically show leukopenia, thrombocytopenia, and elevated liver function tests. On occasion, intracytoplasmic organisms may be identified in the peripheral blood leukocytes, with *E. chaffeensis* purported to infect monocytic cells, and *E. equi* cells of myelocytic lineage.

The causative agents of human ehrlichiosis, in the United States, are transmitted by tick bite. The specific vector has yet to be definitively identified. *Rhipiceph-*

IgG	
Positive Result: Any five of following bands:*	
	18 21 28 30 39 41 45 58 66 93
Patient:	
	18 21 28 30 39 41 45 47 54 56 58 66 75 93
All Bands:	
	18 21 28 30 31 34 37 39 41 45 47 54 56 58 66 75 93
IgM	
Positive Result: Any two of following bands:*	
	21 (37or39) 41
Patient:	
	21 31 34 39 41 58 66
All Bands:	
	18 21 28 30 31 34 37 39 41 45 47 54 56 58 66 75 93
***CDC recommended criteria**	

Figure 2.—Lyme Western immunoblot results

alus sanguineus, the brown dog tick, *Amblyomma americanum*, the Lone Star tick, *Dermacentor variabilis*, the vector for Rocky Mountain spotted fever, *Ixodes ricinus*, the vector for *Babesia* sp., and *Ixodes scapularis*, the vector for Lyme disease, have each been proposed as the intermediate host. Humans are infected when bitten by the arthropod. Symptomatology depends upon the duration of contact with the tick, and the concentration of organism injected into the bloodstream. It appears that small amounts of this rickettsia can be effectively cleared from the system, without the development of illness. Only in higher burdens will the organism cause disease.[1] Once bitten by an infected tick, a human being may expect a one- to three-week incubation period before symptoms of disease develop.

These rickettsiae infect a specific cell type (tissue tropism) and reside inside membrane-lined vacuoles, which may be seen in the peripheral blood during the acute febrile stage of disease. These vesicles do not fuse with lysosomes.[1] Within these vacuoles, the *Ehrlichia* sp. is found in multiple forms, three of which have been most frequently reported. The first, called the "elementary body," is a small dark form, which if not recognized as an infectious agent, may be mistaken for toxic granulation (Fig. 1, top left). Another form is the "morula," which is composed of multiple, dark, small organisms enveloped by host cell membrane (Fig. 1, top center). The third structure is composed of a relatively light, large form which is individually and tightly wrapped in host cell membrane (Fig. 1, top right). Release of the entity appears to occur both by cell lysis and exocytosis. These organisms are then free to infect additional cells of the same lineage.

The mechanism for the pancytopenia which is a constant feature of ehrlichiosis is unknown. A wide range of bone marrow abnormalities have been reported. Although bone marrow hypoplasia has occasionally been reported, it probably would not account for the rapid decreases in peripheral blood counts which are a peculiarity of this illness. Sequestration and/or destruction of the various blood elements both by bone marrow and spleen, the hemophagocytic syndrome, has also been proposed,[3] and is probably the more likely mechanism. The white cell count may also be further depleted by direct infection and cytotoxicity by the organism.

Lyme disease was first described in Lyme, Connecticut, in 1975. The infectious agent, *Borrelia burgdorferi*, is a spirochete which is also transmitted by tick bite. The vector, *Ixodes scapularis* or deer tick, is endemic throughout the northeastern United States. The organism is restricted to the midgut segment of the tick between feedings. Once feeding commences, the spirochete begins to multiply, invades the hemolymph, and spreads to the salivary glands. Once penetration of the salivary glands occurs, the infectious agent may be transmitted to the host. Therefore, transmission does not typically occur during the first 24 to 48 hours of contact.[4]

B. burgdorferi has an incubation period of approximately three weeks. The first sign of infection is usually erythema migrans, however, this is not a constant finding. Patients frequently develop acute infection, which may be self-limiting. Signs and symptoms include headache, neck stiffness, myalgias, arthralgias, malaise, fatigue, and lymphadenopathy. Occasional patients exhibit mild memory impairment and subtle mood changes. A small proportion of patients progress to later manifestations or a more chronic process. Later manifestations include meningoencephalitis, myocarditis, and migrating musculoskeletal pain. Chronic arthritis of large joints may be a long-term sequela.

Diagnosis of most clinical cases of borrelioses, except Lyme disease, is based primarily on the detection of spirochetes in the peripheral blood. However, in Lyme disease, there is usually not a microscopically detectable spirochetemia. Therefore, the diagnosis is primarily based on serology. The enzyme linked immunosorbent assay (ELISA) is the most widely used serologic test. As the assay is not completely specific, positive results must be confirmed by Western immunoblot, which is the "gold standard." This technique identifies multiple bands resulting from antibodies binding to one or more of the bacterial antigens.[4] The patient in the present report tested positive for Lyme disease, both by ELISA and Western blot.

Diagnosis of *Ehrlichia* sp. is also primarily made by serology, as intracytoplasmic rickettsiae are rarely identified. The indirect fluorescent antibody technique is used by the Department of Public Health.[5] Serial dilutions of the patient's serum are tested, and patient titers are obtained by reading the highest dilution which still shows fluorescence. Cross-reactivity between closely related species has been noted for many years. Most notably, cross-reactivity between *E. chaffeensis*, the most recently identified species, and *E. canis* has been apparent.[6] Cross-reactivity between other species has also been questioned, however, little cross-reactivity has been found between *E. chaffeensis* and *E. equi*.[7] In the present report, the patient's serum showed positivity to *E. equi* only.

The earliest cases of human ehrlichiosis in Connecticut were not reported until the summer of 1995.[7] Of these cases, three were positive for both *E. chaffeensis* and *E. equi*, four had increased titers for *E. chaffeensis* only, and nine showed positivity for *E. equi* only. The patient in this report is one of this last group. To date, this patient is the fourth reported case of concurrent presentation of human ehrlichiosis and Lyme disease,[8, 9, 10] and the only one in

Connecticut. Unlike the previous three reports, which displayed serologic reactivity for *E. chaffeensis/E. canis*, this case exhibited both *E. equi* serologic positivity and the presence of the rickettsiae in the peripheral blood.

Three possibilities can account for concurrent disease. The first is that the patient became infected with both diseases individually, and simultaneous presentation was merely coincidence. This possibility is unlikely in our case since the patient could only recall one tick bite, and only one tick bite was identified by careful physical examination. Also, the incubation period of both organisms is similar—*Ehrlichia* sp. 1-3 weeks, and *B. burgdorferi* 3 weeks.

The second possibility is that the patient only had one of the two diseases, and that organism showed cross-reactivity in the serologic testing. This possibility, too, is unlikely, as Petersen et al showed that cross-reactivity between *Ehrlichia* sp. and *B. burgdorferi* was improbable.[11] The present patient had both *E. equi* identified in the peripheral blood, and the typical signs and symptoms of human ehrlichiosis. She also had both a positive ELISA, and positive Western blot for Lyme disease, which is the "gold standard" for a definitive diagnosis.

The third, and most probable, explanation is that this patient contracted both diseases from the same tick bite. Both microorganisms may be transmitted by *Ixodes scapularis*, and both diseases have similar incubation periods. This patient presented with the acute manifestations of clinically, hematologically, and serologically proven human granulocytic ehrlichiosis and Lyme disease, as demonstrated by *Ehrlichia* rickettsiae identified in the peripheral blood, and the presence of anti-*B. burgdorferi* IgM, the primary immune response, shown by the Western immunoblot.

Transmission of multiple infectious agents by a single arthropod bite is not unprecedented. *Ixodes* sp. has been shown to carry multiple infectious agents,[12] and to transmit these agents simultaneously. *B. burgdorferi* and *Babesia microti* coinfection,[13] and *B. burgdorferi* and *Rickettsia rickettsii* coinfection[14] have been reported.

In most cases of this nature, the diagnosis may be a difficult one to make. The differential diagnosis of a patient with nonspecific neurological symptoms, rash, pancytopenia, and elevated liver enzymes is a large one, and includes sepsis, Rocky mountain spotted fever, and viral encephalitis. At the time of this patient's admission, *Ehrlichia* sp. was practically unknown in the northeastern states. Fortunately, over half the neutrophils in the peripheral blood were infected with rickettsiae, and the diagnosis of *E. equi* was made on the first day of admission.

The provisional diagnosis of Lyme disease was made on clinical grounds, and in the absence of CT findings and lack of growth in blood culture. Because of the rapidly falling platelet count, a spinal tap was not performed. At this facility, ELISA testing for Lyme disease is an in-house procedure. This test was done on the first day of admission, preventing diagnostic dilemma and delay in the commencement of appropriate therapy. Therefore, both diagnoses were made on the first day of admission, and the correct antibiotic regimen was immediately instituted.

In summary, this is a case of a long-term Connecticut resident who presented concurrently with human granulocytic ehrlichiosis and Lyme disease. This rarely recognized occurrence may be seen more commonly in the future, as awareness of the manifestations of human ehrlichiosis increases.

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Lead and the Kidney: Nephropathy, Hypertension, and Gout

MARK A. PERAZELLA, M.D.

ABSTRACT—Lead intoxication in human beings has been documented since the second century B.C. Renal disease, hypertension, and gout have all been linked to lead by strong circumstantial evidence. Both acute and chronic nephropathy can occur as a result of lead poisoning. Acute renal failure develops following acute lead intoxication and is often associated with gastrointestinal, neurologic, and hematologic disorders. Both blood and urinary laboratory abnormalities are associated with acute intoxication and are often diagnostic. Chronic lead nephropathy, a chronic tubulointerstitial nephritis on biopsy, occurs in the setting of long-term lead exposure and is often associated with hypertension and gout. Diagnosis of chronic lead nephropathy is more difficult since the laboratory abnormalities seen with acute lead intoxication are not present with chronic lead exposure. The typical clinical picture and the exclusion of other causes of renal disease allow the diagnosis of chronic lead nephropathy to be made. Evaluation of lead stores by either the calcium disodium edetate (EDTA) mobilization test or K-x-ray flourescence are helpful in clinching the diagnosis. Treatment with EDTA lead mobilization is effective for acute lead poisoning while avoidance of further lead exposure prevents recurrence of lead intoxication. Treatment of chronic lead nephropathy with EDTA lead mobilization is useful if renal failure is modest; however, EDTA mobilization is of no benefit in patients with more severe renal insufficiency.

Abbreviations Used in Text

EDTA=ethylenediamine tetraacetic acid, or calcium disordium edatate
GFR=glomerular filtration rate
ERPF= effective renal plasma flow
K-x-ray fluroescence, a technique that can measure *in vivo* bone lead at low levels

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Introduction

LEAD poisoning, or plumbism, causes substantial disease in a variety of organ systems (neurologic, nephrologic, hematologic, musculoskeletal, cardiovascular, and gastrointestinal) in both children and adults.[1] Lead-related disease is not surprising since our western civilization has been heavily polluted by lead since early times.[1,2] In particular, the kidney has been an interesting and at times controversial target of lead intoxication. While acute lead nephropathy is a recognized complication of lead poisoning, definitive causation of chronic lead exposure in the development of chronic renal impairment is lacking despite the abundance of circumstantial evidence linking lead to kidney disease. The work of Emmerson, Wedeen, and Batuman has argued convincingly for the importance of recognizing chronic lead intoxication as both an identifiable and preventable cause of chronic renal disease, hypertension, and gout.[1,3-7]

Historical Background

Human exposure to lead probably dates back to prehistoric times. The use of lead by humans was first noted in artifacts (lead-based ocher paints) recovered from a Neanderthal culture dating back to the Middle Paleolithic age,

approximately 40,000 B.C.[1,2] In addition, other lead artifacts, consisting of beads and slag, were unearthed near lead mines found in Turkey in the Neolithic age [6200 B.C.].[1,2] Clinical descriptions of plumbism date as far back as 200 B.C. when the Greek poet and philosopher Nikander wrote in detail about the colic and pallor associated with lead poisoning.[1,2] In Roman times, lead ingestion was probably widespread as a result of the extensive availability of this heavy metal. Large amounts of lead were produced as a byproduct of the mining process used in silver ore extraction.[1,2] Lead intoxication occurred through ingestion of lead pigments that contaminated food products and water which were often transported or cooked in pipes and utensils made with lead.[1,2] In fact, wine was simmered and served in lead vessels to enhance its flavor and prevent spoilage.[1] Gout was a common malady of the wealthy patricians with their luxurious lifestyle, which included the ingestion of large amounts of lead-tainted wines.[1,2] Infertility and mental infirmity from lead intoxication has been speculated as playing a role in the decline of the Roman aristocracy.[1]

In the 7th century A.D., the physician Paul of Aegina described paralysis and abdominal colic in people who also manifested the classically described "saturnine gout" of the time.[1] Occupational exposure to lead and its consequences acquired from the smelting process of ore were also described by Avicenna and Maimonides at the end of the first millennium and Ellenbog and Agricola in the Renaissance.[1,2] The English aristocracy in the 17th and 18th century, like its Roman counterpart, also suffered from gout and colic as a result of lead poisoning. In addition to the ingestion of tainted wine, other potential sources of lead included the use of pewter utensils, contamination of water by lead plumbing, and the seasoning of foods with a variety of lead adulterated spices. Sir George Baker in 1767 demonstrated, using a crude hydrogen sulfide test, that the introduction of lead into cider was the casue of an epidemic of colic occurring in Devonshire at that time.[1,2] The colic of Poitier was yet another example of an epidemic of colic which was caused by lead.[1] In 1838, Lanqueral des Planches expanded the clinical features of plumbism to include encephalopathy, cachexia, and a lead line on the gums.[1,2]

The first description of nephropathy associated with lead intoxication was published by Lanceraux in 1863, in which he noted substantial atrophy of the renal cortex and tubular fibrosis in the kidney of an artist who habitually held his paint brushes in his mouth.[1,2] However, the classic study implicating lead as the underlying cause of chronic renal damage was published in 1958 in *The Medical Journal of Australia*.[8] In Queensland, Australia, between 1890 and 1930, children were exposed to lead-based weathered white paint. This paint, which covered the verandas and railings of the wooden houses, tended to peal and chip in the hot sun. Ingestion of large amounts of the powdered and flaked paint resulted in lead intoxication in these children. Children who suffered from acute lead poisoning during that period of time were later noted to have a higher incidence of hypertension and renal insufficiency as well as higher likelihood of death from chronic nephritis and encephalopathy. The presence of granular contracted kidneys and high lead content in the bones of those who subsequently died of cryptogenic nephritis provided more evidence of lead intoxication as the cause of chronic renal failure in these subjects.[3,9] An epidemic of chronic lead nephropathy also occurred in the southeastern United States as a result of the consumption of lead-tainted illicit (moonshine) whiskey.[10-12] This liquor was contaminated by lead, in concentrations ranging from 200 mg/L to as high as 1 g/L, from the stills used in the distilling process.[10-12] Automobile radiators with lead residues and pipework joined by lead solder provided the source of lead contaminating the moonshine whiskey produced in these homemade stills. These patients often presented with a clinical picture consistent with both acute and chronic lead poisoning, the result of both past and more recent moonshine ingestion. Kidney size was often diminished and renal biopsy histology revealed areas of interstitial fibrosis, tubular degeneration, glomerular obsolescence, and intranuclear inclusion bodies.[10-12] Occupational and environment-related lead nephropathy was also noted to be a problem in the mid to late 1970s.[1,2,4,5] In addition to gastrointestinal absorption of lead, both inhalation and skin contact were described as modes of lead intoxication.[1,2,4,5] The lead smelter in Kellogg, Idaho, was an example of a massive occupational source of lead pollution. Other important sources of lead exposure are included in Table 1. Chronic lead nephropathy, hypertension, and gout were subsequently shown to occur in otherwise asymptomatic industrial workers exposed to lead despite supposedly safe blood lead levels.[1,2,4,6] EDTA lead chelation revealed high concentrations of urinary lead in these workers. These data suggested that chronic exposure to lead caused chronic renal failure, hypertension, and gout.

Physiology of Lead

Lead is a toxic heavy metal which has no known biological use.[1] Acute exposure will raise the blood lead concentration initially; however, renal excretion eliminates a small portion of the lead while the rest is deposited in tissues.[1,4,5,13] In a matter of days to weeks, lead is stored in bone, and blood levels revert to normal when exposure ceases.[1,4,5,13] Chronic exposure to lead results in a cumulative deposition of this substance in the bone and other tissues. Ninety percent or more of lead stores are in bone

Table 1.—Sources of Lead Exposure	
Occupational	**Environmental**
Brass workers	Home-distilled alcohol
Battery workers	Battery burning
Cable workers	Ceramic makers
Foundry workers	Herbal medicines
Gun makers	Cooking in leaden pots
Lead smelters	Indoor firing ranges
Jewelers	Retained lead bullets
Metal workers	Soldering
Painters and printers	Lead-based cosmetics
Pottery workers	Pottery poorly fired
Welders and solderers	
Pipe cutters	

Table 2.—Clinical Observations Associated with Acute Lead Poisoning	
Gastrointestinal	colic, anorexia, nausea, vomiting, constipation
Neurologic	headache, tremor, dizziness, extensor paralysis, mononeuritis, mental impairment, convulsions
Hematologic	microcytic anemia, reticulocytosis, basophilic stippling
Renal	Fanconi's syndrome, isolated proximal tubular defects, rare azotemia
Other	muscular weakness, lead line on the gingiva, incoordination, malaise

and may have a biologic half life up to several decades.[1,4,5,13] Hence, blood lead levels are useful in diagnosing acute or recent lead poisoning, while EDTA chelation, K-x-ray fluorescence, or bone lead measurement, best estimate chronic or past exposure to lead.

Acute Lead Nephropathy

Acute intoxication by lead, especially in children, is associated with an acute renal syndrome with azotemia and a variety of metabolic derangements.[1,14,15] The usual clinical picture is that of a child who presents with pallor, malaise, and anorexia. A history of lead which occurs through geophagia (pica) or consumption of lead-based paint chips, is usually obtained from the child or family members. The renal lesion associated with acute lead poisoning is characteristic. Renal biopsy specimens in children intoxicated with lead reveal acid-fast, eosinophilic intranuclear inclusions in proximal tubular cells.[1,14,16,17] These intranuclear inclusions are easily and predictably produced in experimental animals infused with lead.[16,17] Detailed study of these inclusions has demonstrated that they contain both lead and protein.[1,16,17] The lead-protein complex, consisting of 50 g of lead per mg of protein, is associated with both morphologic and functional defects in mitochondrial and nuclear metabolism. The patient with acute lead nephropathy may present with a full blown Fanconi's syndrome (aminoaciduria, glycosuria, phosphaturia, proximal renal tubular acidosis), or may have only one of the components of this syndrome.[14,16,17] Rarely, azotemia is the sole renal manifestation. Other clinical observations include the findings listed in Table 2. Laboratory diagnosis of acute lead intoxication includes elevated levels of blood lead, free erythroporphyrin, zinc protopophyrin, urinary aminolevulinic acid, urinary porphobilinogen, and urinary coproporphyrin.[1,14] Chelation with EDTA further clinches the diagnosis of acute lead poisoning, demonstrating a reduction in blood lead levels and an elevation of urinary lead levels, and also provides therapeutic intervention for the acute intoxication.[1,14]

Chronic Lead Nephropathy

Prolonged chronic exposure to lead has been recognized as a cause of otherwise unexplained chronic renal insufficiency occurring in association with contracted granular kidneys.[1,3,8,9] The etiologic role of lead in the development of chronic interstitial nephropathy had been controversial. Hypertension and gout, both potential causes of chronic renal insufficiency, are often associated with chronic lead nephropathy and have obscured the role of lead in the development of this renal lesion.[1,3,5] Furthermore, the etiology of chronic renal failure in the past has been frequently ascribed, often inappropriately, to chronic pyelonephritis. Lancereux's initial description of chronic lead nephropathy in a painter intoxicated with lead, was obscured by contradictory data published during that time.[1,3] Lead was ultimately implicated as the cause of chronic renal failure after the Queensland data were published.[8,9] In addition to the increased incidence of hypertension and chronic nephritis in subjects suffering from lead poisoning, higher bone lead levels were found in these patients than in those with a known cause (chronic glomerulonephritis, chronic pyelonephritis, analgesic nephropathy) of renal disease.[8,9] The high lead content of bone provided evidence of excessive lead exposure and intoxication in the past. More evidence for chronic lead exposure as the cause of lead nephropathy was provided by Emmerson, who performed EDTA lead chelation tests on the Queensland subjects.[1,3] A significantly greater increase in urinary lead excretion was noted in those subjects who suffered from childhood lead poisoning and chronic nephritis than subjects with chronic renal failure of other known causes. Emmerson subsequently developed criteria by which a clinical diagnosis of chronic lead

nephropathy could be made. These included 1) features of long standing, slowly progressive chronic renal disease, 2) moderate to considerable contraction of both kidneys, 3) definitive evidence of excessive past lead exposure, and 4) exclusion of alternative causes for chronic renal disease.[3]

Initial attempts to create an animal model of chronic lead nephropathy were unsuccessful.[3] A host of factors, including the level of dietary calcium, iron deficiency, and vitamin D levels in these animals were thought to modify the amount of lead absorbed and the degree of lead toxicity. These factors apparently precluded the development of the chronic lead lesion in these animals.[3] However, Goyer was able to overcome these factors and create a rat model of chronic lead nephropathy.[3,18] He demonstrated that the prolonged administration of lead to rats predictably resulted in both renal tubular atrophy and interstitial scarring.[18] The morphological appearances of these rat kidneys were similar to those previously described in persons with excessive past lead exposure.

Wedeen and colleagues, in 1975, reported detailed renal function studies in asymptomatic lead workers and found renal disease in half of them.[4] Later, he extended these studies to include screening of 140 lead workers.[5] EDTA lead chelation revealed that 113 of these workers had greater than 1,000 μg/day of lead chelate in the urine. Renal function studies were performed on 57 of the 115 subjects. Twenty-one of these workers had a diminished glomerular filtration rate (GFR) as determined by iothalamate sodium I 125 clearance. Kidney biopsy was performed in 12 of these subjects and found histologically similar to that reported by Lancereux. Tubulointerstitial nephritis, as characterized by tubular atrophy and fibrosis, modest areas of cell infiltration, and preservation of glomeruli was the prominent finding in the biopsy specimens. No acid-fast or eosinophilic intranuclear inclusions, characteristic of acute lead nephropathy, were noted. Eight patients underwent EDTA chelation therapy (1 g injected three times per week for six to 50 months) to treat the lead burden and renal insufficiency. Four of the subjects showed a 20% increase in renal function, as determined by serial determinations of GFR and ERPF, following EDTA chelation therapy. It appeared that patients with preclinical lead nephropathy might benefit from therapy with EDTA lead chelation. Recently, a longitudinal study of low-level lead exposure in healthy veterans in the greater Boston area was published demonstrating that low-level lead exposure may impair renal function and accelerate age-related loss of renal function in otherwise healthy middle-aged and older men.[19]

Lead and Hypertension

The close association of lead nephropathy with hypertension raises the question of whether lead intoxication could cause both hypertension and renal disease. Batuman and coworkers investigated this possibility by performing the EDTA lead mobilization test in hypertensive patients with renal insufficiency compared to hypertensives with normal renal function.[7] A significantly greater burden of lead was noted in hypertensive patients with renal insufficiency than in those with normal renal function. Interestingly, the duration of hypertension was longer in those patients with normal renal function than in those with renal impairment, suggesting that lead may have created a state of secondary hypertension. Control patients with a known etiology of renal failure also underwent EDTA chelation. Urinary lead chelate was within the normal range, confirming that renal failure alone was not associated with lead accumulation and elevated urinary lead concentrations following EDTA chelation. Kidney biopsy was performed in six of the patients with hypertension, renal failure, and elevated urinary lead. Review of the biopsies revealed chronic tubulointerstitial nephritis with predominant tubular atrophy and fibrosis, arteriolar sclerosis, and minimal cell infiltration. These findings were indistinguishable from the biopsy patterns of patients with lead nephropathy from occupational lead exposure.[5,17]

More recently, several survey studies have revealed correlations between hypertension and blood lead levels.[20] In fact, long-term lead accumulation, as reflected by elevated levels of lead in bone measured by K-x-ray fluorescence, was found to be an independent risk factor for the development of hypertension in men in the general population.[20] The mechanism by which lead causes hypertension is unknown. It has been speculated that lead may promote hypertension through its interference with calcium metabolism.[1] Abnormalities in the renin-angiotensin axis have also been reported with lead in animal models of lead-induced hypertension as well as in human subjects.[21,22,23] Finally, there are observations that lead stimulates the sodium-lithium countertransport system in the same direction as seen in essential hypertension.[24] This suggests that a common mechanism may be involved in the hypertension associated with lead intoxication and essential hypertension.

Lead and Gout

In the past, gout was thought to cause chronic renal failure as a result of the deposition of urate crystals in the renal tubules and interstitium.[1,6] In contrast to acute urate nephropathy, which occurs in the setting of massive hyperuricemia, no convincing evidence exists to support that chronic renal disease develops from long-standing hyperuricemia. Although the formation of uric acid calculi may occur from gout and hyperuricosuria, only a minority of patients develop chronic renal failure from obstruction.[1,6] Hence, the precise nature of "gouty nephropathy" has remained poorly defined and has never been well substan-

tiated. On the other hand, gout has long been recognized as a complication of lead intoxication with descriptions dating as far back as the 7th century A.D.[1]

Batuman and colleagues demonstrated that chronic lead poisoning was associated with both gout and renal disease in a group of unselected male veteran patients.[6] They evaluated 44 gouty subjects, 22 of whom had a serum creatinine greater than 1.5 mg/dL. Following EDTA lead chelation, those patients with gout and renal insufficiency had a statistically significant higher amount of lead in their urine (806 μg/3 days) as compared with the 22 patients with a serum creatinine less than 1.5 mg/dl (470 μg/3 days). Once again, control subjects with comparable renal insufficiency from other known causes excreted a low level of urinary lead (440 μg/3 days), excluding renal failure as the sole cause of excess urinary lead excretion. Kidney biopsy results from two patients with gout, renal insufficiency, and excessive urinary lead revealed tubulointerstitial disease and nephrosclerosis, but no urate deposits or crystals. Others have since confirmed these findings.[2,25]

The role of lead in the development of gout is not completely understood, but urate kinetic studies performed in these patients reveal a reduction in renal excretion of uric acid.[3,26,27] In fact, uric acid excretion was found to be disproportionately lower than one would expect for the patients' GFR. This suggested that tubular secretion of uric acid was reduced while uric acid reabsorption was also increased. The role of lead in these urate kinetics is not clear, but may implicate activation of the renin-angiotensin axis (volume depletion and angiotensin II increase proximal tubular uric acid reabsorption) by lead. This would support the speculation that lead causes hypertension by activation of this axis.[21-23]

Recognition of Lead Nephropathy

Lead nephropathy should be suspected in patients who present with a clinical syndrome consisting of chronic renal insufficiency, hypertension, and gout. The renal disease is often characterized by low-grade proteinuria, tubulointerstitial nephritis, and shrunken kidneys, in the absence of other known causes of renal impairment. The presence of hypertension of short duration should signal the possibility of lead as a secondary cause of hypertension before assuming the renal disease resulted from essential hypertension. Hyperuricemia and gout often accompany the renal impairment associated with lead intoxication. The patient with gout, in the absence of a family history of this disease or other medical explanation, may be suffering from chronic lead poisoning. Any combination of these clinical manifestations should prompt a thorough social, occupational, and environmental history to search for a possible source of lead exposure. Those who provide a history of probable lead exposure should be evaluated further. The diagnosis of lead nephropathy, in patients with mild to moderate renal insufficiency, can be confirmed by performing an EDTA lead mobilization test (EDTA 2 g intramuscularly in two divided doses eight to 12 hours apart and collecting urine for three consecutive 24-hour periods). Patients with excessive lead exposure excrete greater than 600 μg lead chelate in three days.[1,3,4,5] More recently, K-x-ray fluorescence has been found to noninvasively determine bone lead content.[28,29] Tibial bone lead concentrations have been found to be highly accurate in estimating body lead stores.[28,29] This radiologic technique may be useful in patients with more severe renal impairment or those who are dialysis-dependent. Blood levels of lead and other heme enzymes altered by lead are better in assessing current exposure and do not correlate with the EDTA chelation test in chronically exposed patients with excess body burdens of lead.[1,4,5]

Treatment of Lead Nephropathy

Prevention of lead exposure is the best treatment for any consequence of lead intoxication. Acute lead intoxication with its attendant complications responds fairly rapidly to EDTA chelation therapy.[1,14] Blood and urinary lead levels normalize following therapy as do the clinical symptoms. Patients with renal disease, hypertension, or gout from previous lead exposure may benefit from EDTA lead chelation therapy. Wedeen demonstrated a 20% improvement in GFR in four of eight patients with mild renal insufficiency who underwent EDTA lead mobilization.[5] Patients were treated with thrice weekly EDTA injections of 1 g for six to 50 months, which was the time required to normalize body lead stores. Additionally, chelation therapy was found to reverse neuropsychiatric disease in an artist with lead poisoning.[29] The efficacy of chelation therapy in more advanced renal disease is not known. Finally, the nephrotoxicity associated with EDTA therapy appears to be rare and tends to occur only when massive doses are administered intravenously in critically ill patients.[30]

Conclusion

Lead pollution of our environment has produced a variety of clinical diseases. Intoxication of the kidney with lead has caused both acute and chronic injury with classic manifestations. While acute lead nephropathy is easily identified and treated, chronic lead nephropathy is less apt to be considered and diagnosed as the cause of chronic renal insufficiency. Therapy of chronic lead poisoning is also complicated when renal function is more severely impaired. However, clinicians should become familiar with the entity of chronic lead nephropathy and recognize clinical clues that suggest the disease. Such clues include the association of hypertension and gout with chronic interstitial nephritis. Furthermore, a history of previous lead exposure in the form of moonshine ingestion or

environmental and occupational lead exposure should alert one to the possibility of lead nephropathy.

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Trends in Breast-conserving Surgery in Connecticut: No Effect of Negative Publicity

ANTHONY P. POLEDNAK, PH.D.

Abstract—Trends in breast-conserving surgery (BCS) rates among 12,745 early-stage invasive breast cancers diagnosed in 1988-94 in Connecticut residents supported the effects of dissemination (around 1990) of results of clinical trials. The lack of decline in BCS from 1993 to 1994 did not support concerns about the effect of negative publicity (in early 1994) regarding fraudulent data from a large clinical trial of BCS *vs* modified radical mastectomy. The BCS rate reached 75% for node-negative cancers 2 cm or less in diameter diagnosed at age <60 years in 1994, although it was lower (and declined with age) for larger and/or node-positive cancers. Further study is needed on the decision-making process regarding BCS and its full implications for the quality of life of the large numbers of women diagnosed each year with breast cancer.

RISING rates of breast-conserving surgery (BCS) in the early 1980s were reported from cancer registries,[1,2] along with a U-shaped pattern of BCS by age.[3,4] A previous report from the population-based Connecticut Tumor Registry (CTR) showed increasing use of BCS for local- and regional-stage breast cancers diagnosed from 1983 to 1990,[5] but noted that continued monitoring was needed to assess the full impact of the 1990 NIH Consensus Conference Panel's conclusion (published in 1991)[6] that conservative treatment (BCS, axillary dissection, and breast irradiation) was "preferable" for most early-stage breast cancers because it provided survival equivalent to total mastectomy "while preserving the breast." However, treatment decisions are complex, and are influenced by patient and physician attitudes.[1] In addition, negative publicity in 1994, including a *New York Times* article (March 1994) and extensive national television coverage, followed the detection of fraud at one center of a large (89-center) clinical trial of BCS, the National Surgical Adjuvant Breast and Bowel Project (NSABP) B-06 Trial. This publicity may have led to a reversal in the temporal trend toward increasing BCS use. For these reasons, recent trends in BCS in Connecticut were examined.[1]

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Methods

BCS in the "first course" (ie, within four months of initiation) of treatment was defined as partial mastectomy (segmental, lumpectomy, quadrantectomy, tylectomy, wedge resection, nipple resection, or excisional biopsy). In the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) Program (which includes the CTR), abstracting and coding of type of surgery,[7] and completness of reporting of cancers from hospitals[8] are of high quality. Using SEER extent-of-disease codes (as revised for 1988), "early-stage" cancers were defined as American Joint Committee on Cancer stage I (2 cm or less in maximum diameter with negative regional nodes) and those stage II cancers that were 2 cm or less with positive regional nodes or greater than 2 cm but less than 5 cm in size (regardless of nodal status). While clinical trials were limited to cancers 4 cm or less in diameter, only 1.7% of

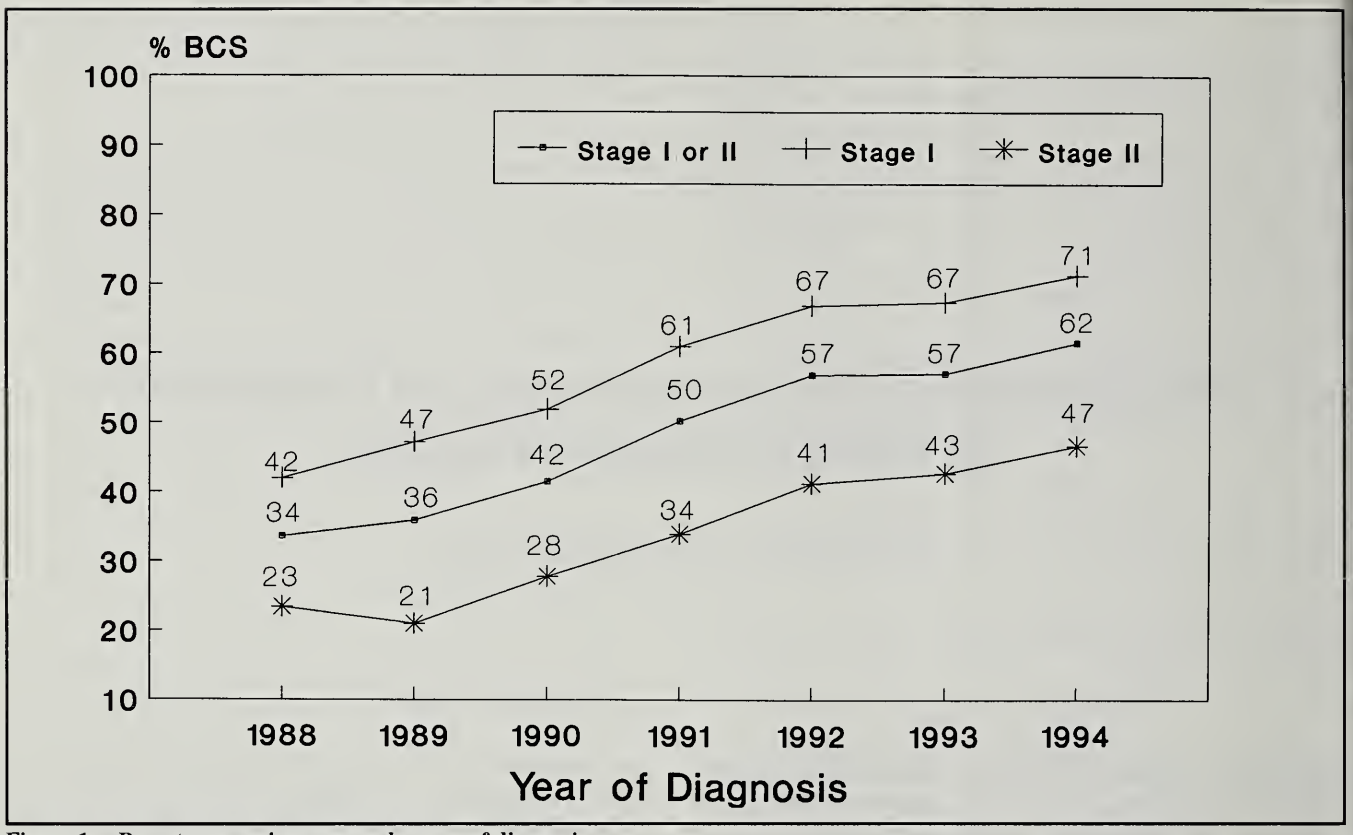

Figure 1.—Breast-conserving surgery by year of diagnosis.

cancers in this study were 4.1-4.9 cm. Excluded were cancers extending to the chest wall or ribs, or with extensive skin involvement, with unknown extent of disease or unknown size. The numbers of cases diagnosed from January (N=144 cases) through November (N=149) 1994 were rather constant and only slightly lower than numbers for 1993; December 1994 cases were excluded because of apparent incomplete reporting.

The final sample included 11,119 cancers diagnosed in 1988 to 1993 and 1,626 in January to November 1994, providing data before and after the 1990 NIH Consensus Panel on treatment of early-stage breast cancer[6] and just after the negative publicity about fraudulent data from a clinical trial.[1]

Results

After a small increase from 1988 to 1989 (except for stage II cancers), BCS use by year of diagnosis (Fig. 1) increased (14% to 19% per year) from 1989 to 1992 for stage I and II cancers combined. A plateau in BCS occurred from 1992 to 1993, or prior to the negative publicity in 1994 regarding the NSABP B-06 Trial, and the increase in BCS from 1993 to 1994 is not consistent with an impact of that publicity. Also, BCS did not decline within 1994 (ie, 327/571 or 57.3% in January to April, 387/605 or 64.0% in May to August, and 283/450 or 62.9% in September to November) or from rates for the corresponding months of diagnosis in 1993 (ie, 318/564 or 56.4%, 363/632 or 57.5%, and 300/537 or 56.9%). Because treatment was started in the same or next month as diagnosis for 98% of the 1,626 cancers diagnosed in 1994, any effect of negative publicity about BCS in early 1994 should have been apparent in this study.

For cancers diagnosed in 1988, there was a U-shaped pattern of association between BCS and age for both stage I (Fig. 2A) and II (Fig. 2B). By 1994, however, BCS declined with rising age; a linear trend test for BCS by age group was statistically significant for stage II ($P<.05$) but not for stage I ($P=0.25$).[9]

Discussion

The increase in BCS use from 1989 to 1992 is consistent with an effect of the NIH Consensus Panel's (June 1990) recommendations[6] and publications (in 1988 and 1989) from other trials in the U.S. and Europe.[1,10] BCS rates had been flat from 1985-87 in SEER areas,[2] including Connecticut.[5]

The lack of evidence for an effect of negative publicity about clinical trials of BCS contrasts with a detectable effect of publicity about breast cancer in the wives of U.S. politicians on women's breast cancer screening behavior.[11] For mammography rates, women's knowledge and various psychological factors may be crucial,[12] although strong physician recommendation is also a factor.[13,14] In contrast, in cancer treatment decisions,[1,15] as in random-

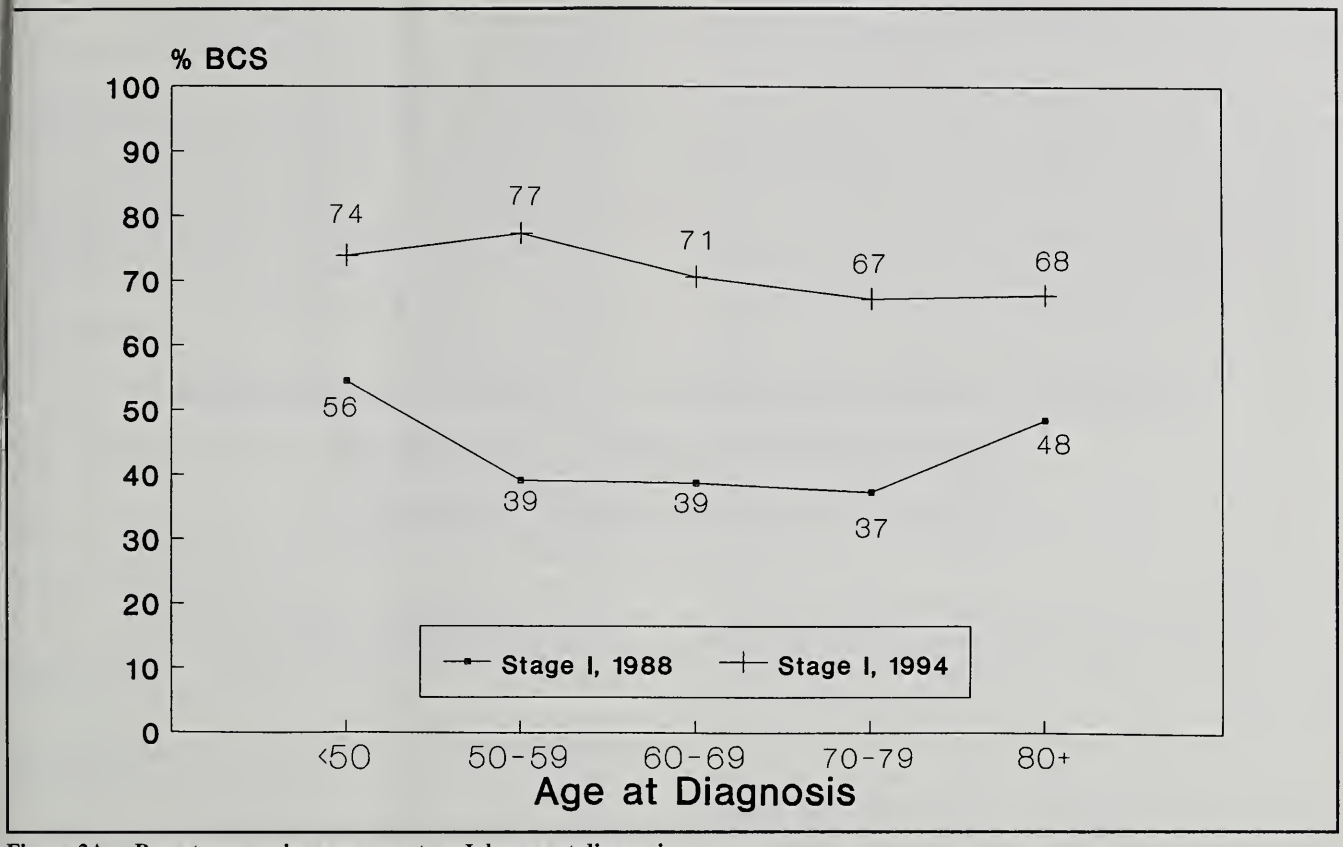

Figure 2A.—Breast-conserving surgery, stage I, by age at diagnosis.

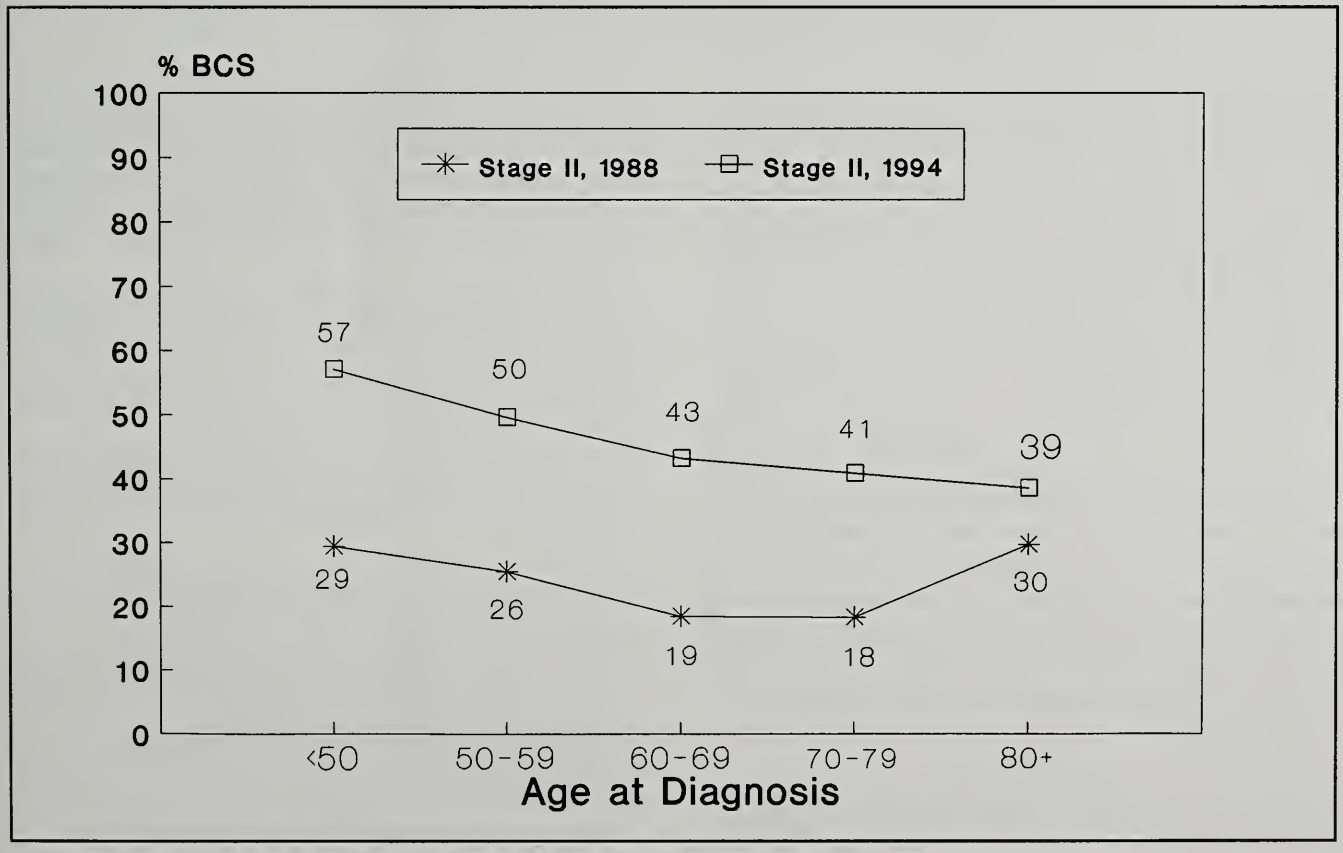

Figure 2B.—Breast-conserving surgery, stage II, by age at diagnosis.

ized clinical trials,[16] physician behavior may predominate, although patient involvement in treatment choices for early breast cancer may be increasing.[15] The negative publicity regarding fraud at only one center of an 89-center clinical trial is unlikely to have affected physician attitudes about BCS, and the conclusions of the NSABP B-06 Trial have been supported by audits and reanalyses.[1,17,18] Conceivably, however, the negative publicity could have affected patients who had already had BCS, resulting in their seeking additional breast surgery. Hospital discharge databases could be useful in examining this question,[19] although the reason for more extensive surgery (ie, cancer recurrence *vs* fear of recurrence) could prove difficult to distinguish. Noteworthy was the disappearance of the U-shaped pattern of BCS rate by age group, due in part to smaller temporal increases for the oldest age group (80+ years) (Fig. 2). In the past, BCS may have been considered less aggressive treatment than modified radical mastectomy and may have been relatively frequently advocated by physicians for patients 80+ years old. The persistence of relatively lower BCS rates for stage I *vs* II cancers may reflect relatively greater physician reluctance to recommend BCS for larger, and/or small node-positive cancers. The role of physician- and patient-related factors in the decline of BCS with age among stage II cancers requires further study.

The importance of local physicians has been suggested by geographic variation in BCS rates,[1,20,21] but the maximum achievable (or desirable) BCS rate, even in a single geographic area, is uncertain. Multicentric cancers are one factor limiting BCS,[1] although an association between multicentricity and infiltrating lobular cancers has not been supported and conservative treatment is recommended.[22] Modified radical mastectomy may be preferred by some women, because of frequent travel, absence from work, and possible financial costs involved in the recommended course of post-BCS radiotherapy.[1,2] Women's attitudes about breast preservation and concerns about radiotherapy also may influence decisions about BCS.[1,23] The cumulative incidence of second primary cancers related to post-BCS radiotherapy may be low, although further studies are needed[1] and small risks of grave outcomes may influence patient preferences for various treatments.[14] Risk of cardiac toxicity[1] and brachial-plexus neuropathy[24] after radiotherapy may be very low and declining due to technical advances, although better long-term data are needed.[1] As with mammography,[25] informed decisions about BCS are complex; further study is needed on decision-making about BCS and its implications for quality of life.

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Abstract of Papers: 1996 Connecticut Chapter, American College of Physicians, Scientific Session Award Winners

FOREWORD: These papers were presented at the Annual Scientific Session of The Connecticut Chapter of the American College of Physicians.

Discussing Advance Directives: A Study of Outpatients' Attitudes

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Several authors have suggested that discussions with patients about advance directives (AD) take place in the outpatient setting; however, little is known about patient preferences regarding the discussion. To determine outpatients' attitudes towards discussing ADs, we surveyed veterans attending a primary-care clinic. Of 408 eligible patients, 308 (75%) completed a questionnaire which inquired about knowledge, previous completion and discussion of ADs, and wishes regarding discussing ADs with their health-care provider (HCP; physician, or nurse practitioner). Participants were mostly male (97%), Caucasian (87%), had a mean age of 65 (range 25-86), and included 63% who had been seeing their HCP for greater than one year.

While 88% of patients had heard of living wills and 67% had thought about end-of-life issues, only 20% had prepared an AD, and an even smaller number (14%) had discussed their wishes with their HCP. Age, number of hospitalizations, and self-reported health status did not predict prior completion of an AD. While patients who had already discussed ADs with their HCP tended to have a lower self-reported health status, they did not differ in age or number of hospitalizations from patients who had not had such a discussion. Almost half of patients (47%) who had not discussed ADs with their provider would like to. Forty-nine percent of patients had discussed their wishes with people other than their HCP: of these, 70% had spoken with their spouse or significant other, and 55% with a friend. A majority of patients (55%) thought an office visit would be an appropriate setting for AD discussion, and 69% would like their spouse or other family members to be included in the discussion. Few patients (7%) felt that discussions should take place only upon admission to the hospital.

Outpatients have often thought about end-of-life issues and may already have an AD; however, they rarely discuss this with their HCP. Since it is difficult to predict which patients have or would like to discuss ADs, practitioners should discuss ADs with all patients, regardless of age or health status. This approach should be an integral part of a wider effort to educate both patients and HCPs about proper use of ADs.

Best Oral Presentation: *Discussing Advance Directives*—A Study of Outpatients' Attitudes" Michele Despreaux, M.D., Yale Internal Medicine Program. Contact at: 19 Montoya Drive Branford, CT 06405. PHONE: H: (203) 481-8090 B: (203) 260-7600.

Aseptic Meningoencephalitis Is a Manifestation of Temporal Arteritis

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Temporal arteritis masquerades in a variety of ways resulting in considerable expense and delay in its diagnosis. This results in the emergence of serious sequelae like aortic regurgitation, stroke, blindness, and death. We present a rare manifestation of this disease that reinforces the need to increase our awareness of its clinical presentations.

A 71-year-old white male presented with a waxing and waning dysarthria and right-sided weakness which was preceded three months earlier by mild headache, diplopia, intermittent dysphagia, and vertigo. Past medical history was significant for mild hypertension and a positive skin test for tuberculosis (PPD). He did not smoke, drink, or use illicit drugs. Medications included isoniazid, rifampin, pyridoxine, pyrazinamide, and verapamil. Anti-TB medications were started for presumed tuberculosis (TB) following a negative work up three months earlier, except for a magnetic resonance imaging (MRI) study of the brain showing diffuse meningeal enhancement suggestive of meningoencephalitis. The physical examination was significant for a right upper motor neuron facial palsy and a right hemiplegia involving the upper more than the lower limbs. Laboratory data were essentially normal but for an elevated erythrocyte sedimentation rate (ESR), a mild monocytic pleocytosis, and an elevated protein in the cerebrospinal fluid (CSF). A polymerase chain reaction assay for TB in CSF was negative as was a work up for vasculitis. A repeat MRI of the brain showed no change and a magnetic resonance angiogram of the brain was normal. A digital subtraction angiogram of the aortic arch and extracranial vessels and bilateral carotid angiography were normal. A left temporal artery biopsy was performed prior to a planned leptomeningeal biopsy and showed inflammatory changes consistent with temporal arteritis but without classic giant cells. The patient improved dramatically on steroid therapy with normalization of the ESR. All other medications were discontinued with the exception of isoniazid.

Temporal arteritis is now widely recognised as a disseminated arteritis of medium sized vessels. A high index of suspicion is needed in geriatric patients to make the diagnosis. Meningoencephalitis is, however, extremely unusual but has been described. The presence of giant cells is considered classic of the disease, but not a prerequisite for the diagnosis, nor does it influence clinical course or therapy. About 40% of positive biopsies do not show giant cells due to the focal, segmental nature of the disease

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Poster Presentation Winners: *First Prize*—"Aseptic Meningoencephalitis as a Manifestation of Temporal Arteritis"—Sundur Sandur, M.D., Yale Primary Care Program. Contact at: #7J, 100 Jefferson Square, Waterbury, CT 06706, (203) 574-6000 H: (203) 759-0216.

Cytoplasmic Interactions of Plakoglobin with Desmoglein 1, The Pemphigus Foliaceus Antigen

Sailaja Puttagunta, M.D. (Associate pending) and Pamela Cowin, Ph.D.
Yale Primary Care Internal Medicine Program and New York University Medical Center.

Abstract.—Desmoglein 1 (Dsgl) is a 165 kD glycoprotein component of suprabasal epidermal desmosomes and the prototype of a subset of the cadherin superfamily of cell-cell adhesion proteins known as desmogleins. The adhesive function of classical cadherins is known to be dependent upon their association with cytoplasmic components called catenins. In the case of desmogleins, a single interaction has been described with a protein called plakoglobin, that is found in desmosomal plaques, adherens junctions, and the cytosol. Several proteins with homology to plakoglobin have been described that regulate junction assembly and implement morphoregulatory signals. To address the functional significance of plakoglobin-desmoglein interactions, we have mapped the sequences of plakoglobin that are crucial for this association by using the yeast dihybrid system. By examining the binding of Dsgl to a deletion series of plakoglobin expressed as fusion proteins in the yeast vector pGBT9, we have

defined a small region of plakoglobin that is important for association with desmoglein. These findings were also confirmed by in vitro immunoprecipitation studies.

In conclusion, identification of the binding domain of desmoglein on plakoglobin will facilitate further functional studies of plakoglobin. In other words, the functional significance of desmoglein-plakoglobin binding can be elucidated by deleting the desmoglein binding domain on plakoglobin and expressing the deleted forms in epithelial and nonepithelial cells.

***Poster Presentation Winners:** Second Prize*—"Cytoplasmic Interactions of Plakoglobin with Desmoglein 1, the Pemphigus Foliaceus Antigen"—Sailaja Puttagunta, M.D., Yale Primary Care Program. Contact at: Yale Primary Care Program, Department of Medicine, St. Mary's Hospital, Waterbury, CT 06706. H: (203) 729-3352.

Treatment of Failed Hemodialysis Access Sites: Comparison of Surgical Treatment with Thrombolysis and Percutaneous Angioplasty

Ali Safdar, M.D. (Associate) and Mitchell Fogel, M.D.
St. Vincent's Medical Center, Bridgeport

Hemodialysis access has a high incidence of complications. The most common cause of hemodialysis access stenosis is venous intimal hyperplasia. Left undetected and untreated, stenosis progresses to occlusion. The usual management of a thrombosed access has been a simple thrombectomy with access revision if indicated. An alternative to surgical thrombectomy for acute thrombosis is thrombolysis with percutaneous transluminal angioplasty (PTA). The current nonrandomized and retrospective review compares the value of thrombolysis with PTA and the conventional surgical methods of treating failed arteriovenous access.

Patients and Methods.—All patients who underwent surgery and thrombolysis at St. Vincent's Medical Center for occluded hemodialysis accesses in the following time periods were included in the study. Twelve patients with a total of 16 thrombosed hemodialysis access grafts were referred for thrombolytic therapy between January 1994 and September 1995. Seventeen patients with a total of 26 thrombosed hemodialysis access grafts were referred for surgical thrombectomy between January 1994 and June 1995. The two groups were comparable for age, sex, and lesion morphology.

Technique

Thrombolysis and percutaneous angioplasty.—Urokinase was infused via cross catheter technique; if needed, balloon angioplasty was performed.

Surgical Revision.—Thrombectomy was performed and if a stenosis was present, either a patch angioplasty or an interposition was performed with the thrombectomy.

Result.—1) Initial success in angiography suite or operating room was 13/16 (81%) in thrombolysis/PTA and 5/26 (96%) in the surgical group. 2) Initial success to first hemodialysis was 10/16 (63%) in thrombolysis/PTA group and 21/26 (81%) in the surgical group. 3) Time interval between recognition of occlusion and surgery or thrombolysis was 9.08 days and 1.06 days respectively. 4) Duration of patency in thrombolysis/PTA was 67.3 days and 72.3 days in the surgical group. 5) Temporary venous access was used in 7/16 (44%) in thrombolysis/PTA and 22/26 (85%) in the surgical group.

Conclusion.—The current data reveal similar success rates and duration of patency for shunts treated with either conventional surgical thrombectomy or thrombolysis. Thrombolysis however, was associated with both a shorter lag period between thrombosis and intervention and a lower use of double lumen catheters (DLC) than surgical thrombectomy. The ability to avoid the placement of DLC may be an advantage to chronic hemodialysis patients. Based on our data thrombolysis can be used in place of surgical thrombectomy in the treatment of thrombosed dialysis access grafts.

***Poster Presentation Winners:** Third Prize*—"Treatment of Failed Hemodialysis Access Sites: Comparison of Surgical Treatment with Thrombolysis/ Percutaneous Angioplasty"—Ali Safdar, M.D., St. Vincent's Medical Center. Contact at: St. Vincent's Medical Center, Dept. of Medicine, Level 8, Bridgeport, CT 06606, (203) 576-5576.

Is Nonrheumatic Aortic Valve Disease an Inflammatory Disorder?

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Nonrheumatic aortic valve disease is a common disorder in adults. Pathogenesis of this disease remains unknown. Recently a chronic inflammatory process has been shown to occur. Macrophages and lymphocytes have been found to be present in large numbers in degenerating valve tissue. Their transmigration into the tissue could be through cell surface expression of adhesion molecules on endothelium and inflammatory cells. In order to investigate whether circulating soluble forms of adhesion molecules sICAM-1, sVCAM-1, and sE-Selectin are elevated in nonrheumatic aortic valve disease, we measured serum levels of these molecules in 10 patients with nonrheumatic aortic valve disease and 15 healthy controls. Results are expressed as mean ± standard error of the mean in ng/mL.

Group	sICAM-1	sVCAM-1	sE-selectin
Aortic valve disease	389+/-24	807+/-52	68+/-7
Healthy controls	208+/-13	506+/-15	38+/-3

The serum soluble adhesion molecules sICkM-1, sVCAM-1, and sE-selectin were significantly elevated in patients with aortic valve disease compared to healthy controls ($P < .0001$ for sICAM-1, $< .0001$ for sVCAM-1, and $< .001$ for sE selectin). We conclude that devated levels of soluble adhesion molecules could reflect the pathogenetic role of these molecules in recruitment of mononuclear cells and destruction of valve tissue.

Evaluation of Process and Complications of Heparin Anticoagulation in a Large Community Teaching Hospital

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Hospital of Saint Raphael, New Haven

Several recent trials have shown anticoagulation with heparin to be more effective when the dose is adjusted using a weight-based nomogram, as compared to using the standard, nonadjusted protocol. The time to achieve the therapeutic activated partial thromboplastin time (aPTT) range is usually shorter and no significant increase in the number of complications has been found in most of the studies. The objective of this study was to evaluate retrospectively the effectiveness (measured as percentage of patients with aPTT within the therapeutic range at 24 and 48 hours) and complications of anticoagulation with heparin when the commonly used, nonadjusted protocol was applied.

Methods.—We enrolled 210 patients receiving more than four doses of intravenous heparin who were admitted to the Hospital of Saint Raphael from January to June 1994. Charts were reviewed to obtain information regarding indication for treatment, loading, and maintenance doses chosen, aPTT levels at 24, 48, and 72 hours and time to achieve the therapeutic range. The presence of hemorrhagic complications or thrombocytopenia was also recorded.

Results.—The most frequent indications for the use of heparin were cardiac events (43%), deep venous thrombosis (20.5%), and pulmonary embolus (8.6%). The loading dose was 5,000 units IV bolus in 55.5% of the cases, and in 77.6% of the times the initial infusion rate was 1,000 units/hour. Fifty-three percent of the patients had a therapeutic aPTT at 24 hours, and that number increased only to 78.4% after 48 hours of treatment. The average time for the aPTT to reach the therapeutic range was 29 hours and 20 minutes. Twenty-nine episodes of hemorrhage were documented, with 13 (6.2%) considered as major bleeding and 16 (7.6%) accounting for minor bleeding. Only two patients (1%) developed thrombocytopenia attributable to the use of heparin.

Conclusion.—The low percentage of patients with aPTT within the therapeutic range at 24 and 48 hours correlates well with previous reports using a standard, nonadjusted protocol. The complication rate found in this study is comparable to those reported in the literature for both hemorrhagic complications and thrombocytopenia.

Management of Hospitalized Diabetic Patients

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As managed care is ushered in, many practitioners, hospitals, and health-care facilities are modifying and streamlining delivery care to more efficient methods.

The diabetic population will pose a great challenge since statistics from 1990 have shown that diabetes was included as one of the discharge diagnosis in 2.8 million patients. Diabetes was the primary diagnosis in 420,000 patients with nearly 1.1 million hospitalizations of which 33% were due to peripheral vascular disease. We feel that a more aggressive approach to the hospitalized diabetic will help streamline hospital stay, improve overall outcome for the patient, and possibly reduce the readmission rate.

We retrospectively reviewed charts of 89 hospitalized patients who were admitted for various underlying medical problems associated with diabetes. Glucose control and sliding scale insulin prescribed showed a wide range of variability, and overall glucose management was felt to be poor. There were an equal number of type I and II diabetics and admission glucose ranged from 45 to 1.495 mg/dL with discharge finger blood glucose ranging between 70 and 428 mg/dL and 46% being greater than 220 mg/dL. Daily blood sugars were erratic and remained over 300 mg/dL in 26% of readings obtained. From the information gathered, overall diabetic management is still far from optimal. We propose a more scientific approach with calculated weight and insulin dosage in combination to provide better control, eliminating the variability of timing and dosing, and simplifying the management of hospitalized diabetic patients. We also feel that an experienced diabetic team will provide optimal management and instruction to the patient.

Role of Gated Technetium-99m Single Photon Emission Computed Tomography (SPECT) Imaging in Predicting Myocardial Viability

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Distinction between viable and necrotic myocardium in an area of a resting perfusion defect (RPD) presents a diagnostic dilemma. Although thallium perfusion imaging is an accepted method for assessing myocardial viability in patients with coronary artery disease (CAD), data regarding the use of Technetium-99m Sestamibi imaging is preliminary. As gated SPECT Sestamibi imaging permits assessment of wall motion, we hypothesized that the presence of wall motion or wall thickening in the region of a RPD implicates myocardial viability, and that these areas may benefit from revascularization procedures.

Methods.—Fourteen patients with known CAD and RPD on imaging were prospectively evaluated with the rest perfusion and gated SPECT imaging which was performed at baseline, and then within six weeks of revascularization. Anatomical territories were defined as left artery descending, left circumflex, right coronary artery, and apex. Images were graded by a consensus of three blinded readers using a 5-point segmental perfusion activity score (0=normal to 4=absent) and wall motion was graded with a 6-point motion score (0= hyperkinetic to 6=dyskinetic). Fixed defects were defined as segments with scores of 24. Wall motion in gated SPECT imaging was defined as being present if the scores were ≤4.

Results.—A postrevascularization nuclear perfusion study was performed in 14 patients and 42 anatomical territories were compared. As shown in the 2x2 table. chances of perfusion score improvement were significantly higher (risk ratio=l.35) if the wall motion was present in gated SPECT imaging before revascularization (positive predictive value=73% and negative predictive value=100%).

Conclusion.—Gated SPECT imaging predicts myocardial viability in patients with resting perfusion defects and may have an effect in selecting patients for coronary revascularization.

Characterization of the Upstream Regulatory Elements of Desmoglein 1: The Bovine Desmosomal Cadherin Gene Encoding the Pemphigus Foliaceus Antigen

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Abstracts.—The cadherin family of calcium dependent cell-cell adhesion and recognition proteins can be categorized into a number of subsets based on the cytoplasmic sequences of their members. Currently these families include classical cadherins, desmogleins, desmocollins, protocadherins, and the products of the Drosophila genes FAT and Dachsous. Dsg1, the prototype of the desmoglein family, is a major component of epidermal desmosomes and the antigenic target of autoantibodies found in the sera of patients with the blistering disease, pemphigus foliaceus. In the epidermis, Dsg1 is selectively expressed only in the superficial layers and thus, the lesions in pemphigus foliaceus are confined to the superficial layers of the epidermis. To understand the regulation of expression of Dsg1 in such a selective fashion, we decided to study the upstream regulatory elements of the DSG1 gene. In this study, we characterized an 800 base pair region upstream of the DSG1 coding sequence, which harbors a TATA box and consensus sequences for binding of transcription factors. This segment was then subcloned into a pCAT vector, upstream of the coding sequence of the CAT gene. Functional assays were performed using keratinocytes in primary culture, which proved that this 800 base pair segment has promoter activity.

In conclusion, we have characterized the promoter region of the bovine DSG1 gene, after cloning the complete gene and studying its structural characteristics. This is the first study that identified and characterized a promoter for any desmosomal gene. The future implications of this study are that it will facilitate identification of transcription factors responsible for regulation of expression of Dsg1. It could also be used to express other proteins in the superficial layers of the skin to study their functional effects. Transgenic mice which overexpress Dsg1 can be created to study the phenotypic effects of overexpression of Dsg1.

Hepatitis C and Mixed Cryoglobulinemia

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Hepatitis C (HCV) has recently been recognized as the major etiology of "essential" mixed cryoglobulinemia (MC). The following case illustrates this association.

A 45-year-old type II diabetic man with known mild chronic active hepatitis C presented with recurrent bilateral ankle pain and lower leg rash. On examination, he was afebrile. Skin examination revealed nonblanching, palpable purpura in clusters over his medial ankles and dorsal feet. His left wrist and both ankles were warm, red, and boggy. Abdomen was protuberant with a palpable liver edge and spleen tip, but without ascites. Skin biopsy revealed leukocytoclastic vasculitis (LCV); ankle synovial fluid was without crystals or organisms; complete blood cell count, chemistries, and urinalysis were normal; rheumatoid factor (RF+) 1: 2560; Complement (C4) decreased; hepatitis C viral antibody (positive) [HCV Ab+]; hepatitis C viral ribonucleic acid (positive) [HCV RNA+]; cryoglobulins + with cryocrit = 1.5%.

Several teaching points may be made by this case. The classic triad of MC includes palpable purpura, arthralgia, and weakness. In the absence of hemostatic defects, palpable purpura signify LCV, a histologic finding seen in rheumatic disease, infection, drug reaction, vasculitis, and cryoglobulinemia. Skin lesions in MC are uniformly LCV. The joint disease of MC is inflammatory, nondeforming, and usually involves the lower extremities. Although this man had no discernable muscle weakness, the classic neurologic deficits are mononeuritis multiplex and peripheral sensorimotor neuropathy. Renal lesions are also common and include membranoproliferative or mesangial proliferative glomerulonephritis, usually heralded by proteinuria and hypertension rather than azotemia.

Mixed cryoglobulins consist of IgM with rheumatoid factor (RF) activity and polyclonal IgG. Thus, patients with MC have positive RF, underscoring the nonspecificity of RF. Antibodies to hepatitis C have been reported in up to 98% of patients with MC, many of whom have normal LFTs. Increasingly, PCR for HCV RNA appears to be a more sensitive test and should be pursued in the setting of normal LFTs and absent antibodies. Alpha-interferon has been shown to be an effective treatment in up to 77% of patients with MC (interestingly, a whole decade prior to the discovery of the link between HCV and MC), as evidenced by resolution of purpura, arthritis, neuropathy, renal, and liver disease. Therefore, it is imperative to search for and treat HCV in cases of MC.

Lyme Disease—United States, 1995

LYME disease (LD) is caused by the tickborne spirochete *Borrelia burgdorferi* sensu lato. Surveillance for LD was initiated by CDC in 1982 and, during 1990, the Council of State and Territorial Epidemiologists designated LD as a nationally notifiable disease. For surveillance purposes, LD is defined as the presence of an erythema migrans rash 25 cm in diameter or laboratory confirmation of infection with objective evidence of musculoskeletal, neurologic, or cardiovascular disease.[1] This report summarizes cases of LD reported by state health departments to CDC during 1995 and indicates that the number of reported cases declined slightly from 1994.

In 1995, 11,603 cases of LD were reported to CDC by 43 states and the District of Columbia (overall incidence 4.4 per 100,000 population), the second highest annual number reported since 1982 but an 11% decrease from the 13,043 cases reported in 1994 (Fig. 1). As in previous years, the highest numbers of cases were reported from the northeastern, north-central, and mid-Atlantic regions (Fig. 2). Incidences >4.4 per 100,000 were reported by eight states, all in established LD-endemic regions (Connecticut [45.6], Rhode Island [34.9], New York [21.9], New Jersey [21.1], Pennsylvania [16.7], Maryland [9.2], Wisconsin [7.2], and Minnesota [5.8]); these states accounted for 10,640 (92%) of reported cases. In 1995, no LD cases were reported from Alaska, Colorado, Hawaii, Idaho, Montana, North Dakota, or South Dakota.

Sixty-three counties each reporting 220 cases accounted for 78% of all reported cases. Reported incidences were >100 per 100,000 in 14 counties in Connecticut, Maryland, Massachusetts, Minnesota, New Jersey, New York, Pennsylvania, Rhode Island, and Wisconsin; the highest reported incidence was in Nantucket County, Massachusetts (838.8) (Fig. 3).

Compared with 1994, the number of LD case reports in 1995 decreased by 113 (89%) in Georgia, 82 (77%) in Delaware, 76 (58%) in Virginia, 51 (52%) in Oklahoma, 49 (48%) in Missouri, 126 (27%) in Rhode Island, 537 (26%) in Connecticut, and 1,222 (24%) in New York. Reported cases increased by 580 (40%) in Pennsylvania and by 61 (29%) in Minnesota. In the remaining states, numbers of reported cases remained stable.

The highest proportions of cases occurred among persons aged 0 to 14 years (2,760 [24%]) and adults aged 35 to 49 years (2,797 [24%]). Of 11,504 cases for which sex was reported, 5,811 (51%) were male.

Reported by: State health departments. Bacterial Zoonoses Branch, Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The number of reported LD cases has increased steadily from 1982 through 1995, possibly reflecting increased recognition and reporting compliance and a true increase in incidence. The slight decline in the number of LD cases reported in 1995 from 1994 may have resulted from changes in these factors or a decrease in populations of *Ixodes scapularis*, the principal tick vector in the northeastern and north-central United States, as a result of variations in the environment. For example, light snowfall and dry spring conditions in Rhode Island during 1995 have been temporally associated with a 33% decline in the population of *I. scapularis* from 1994 (T. Mather, University of Rhode Island, Kingston, personal communication, 1996).

Decreases in the number of reported LD cases in Georgia and Missouri may reflect 1) increased awareness among health-care providers that LD is not endemic in these states and 2) the possibility that some tickborne rashes may be related to another etiology. No cases in Missouri or the southern states have been confirmed by isolation of *B. burgdorferi*. An LD-like illness among some patients in Georgia and Missouri is characterized by a localized, expanding circular-skin rash, similar to erythema migrans, and negative serology for *B. burgdorferi*.[2] An uncultivable spirochete (*B. Ionestari* sp. nov) identified in lone star ticks (*Amblyomma americanum*) collected from Missouri, New Jersey, New York, North Carolina, and Texas has been postulated as the possible etiologic agent.[3]

Vaccines to protect against LD are in advanced stages of development and evaluation. However, personal protection measures (eg, applying tick repellants and inspect-

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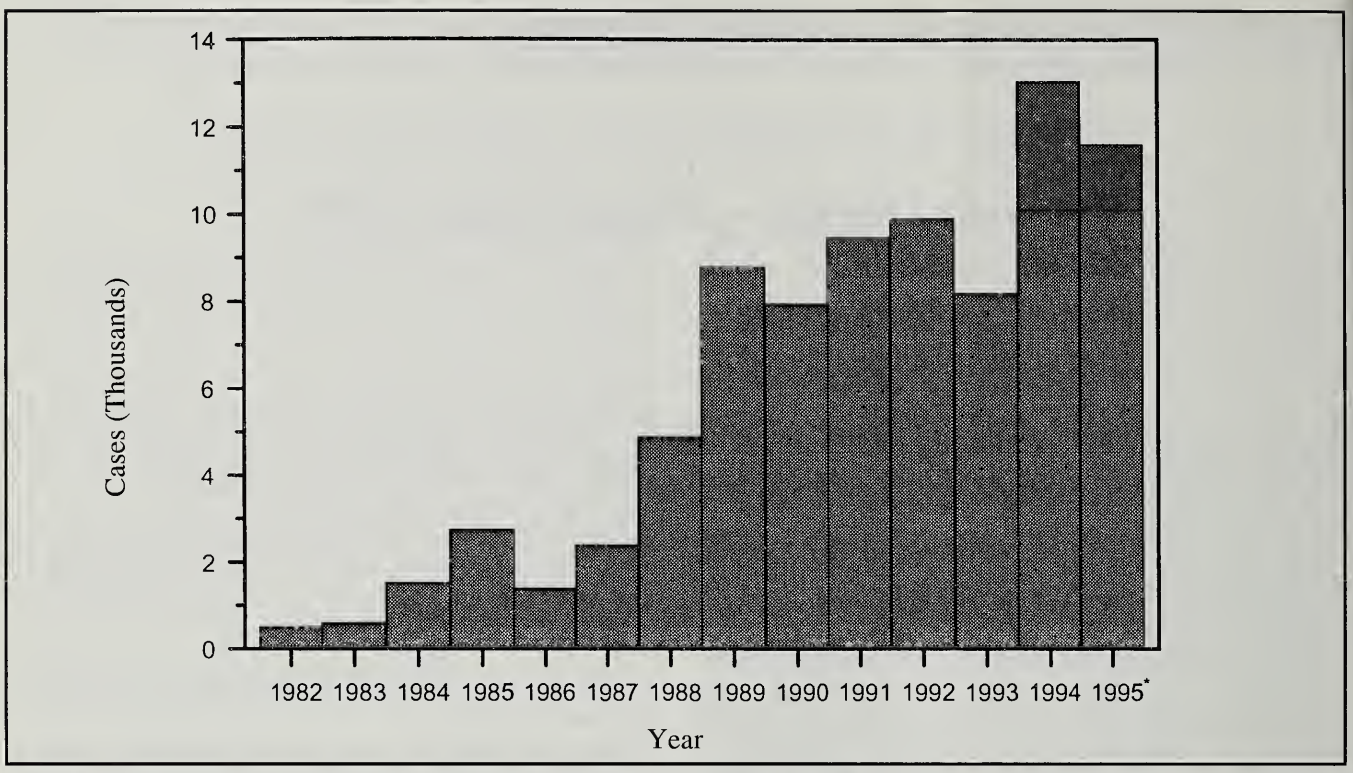

Figure 1.—Number of reported Lyme disease cases, by year—United States, 1982-1995.

ing for ticks) and environmental modifications (eg, applying insecticides and using deer fencing) will continue to be important methods for reducing the risk for exposure to tick bites and preventing LD and other tickborne diseases (eg, ehrlichiosis and babesiosis).[4-6] To enable optimal treatment of patients, clinical and laboratory data must be used to distinguish between these diseases, and the possibility of coinfection with more than one agent should be considered.[7,8] Early stages of LD usually are treated with amoxicillin or doxycycline; the treatments of choice for ehrlichiosis and babesiosis are tetracyclines and clindamycin/ quinine, respectively.[9]

Participants in the Second National Conference on the Serologic Diagnosis of Lyme Disease (October 1994)

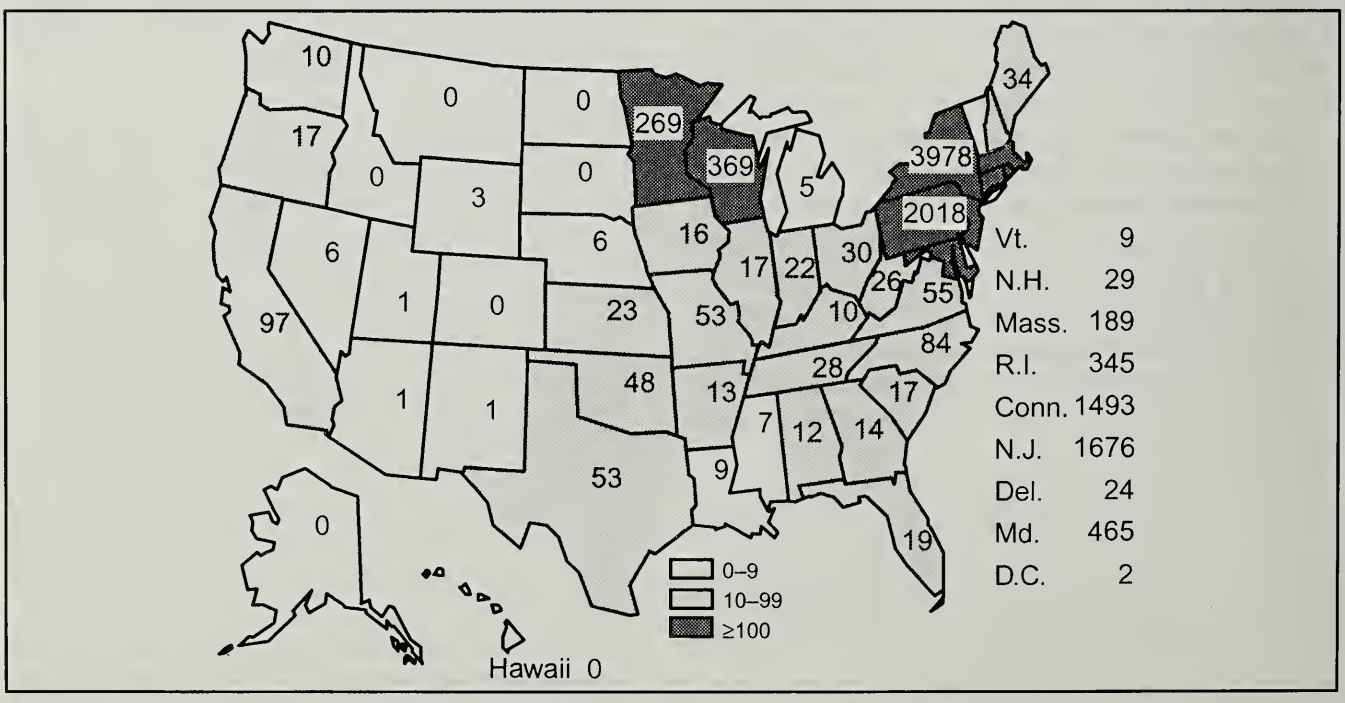

Figure 2.—Number of reported Lyme disease cases, by state—United States, 1994.

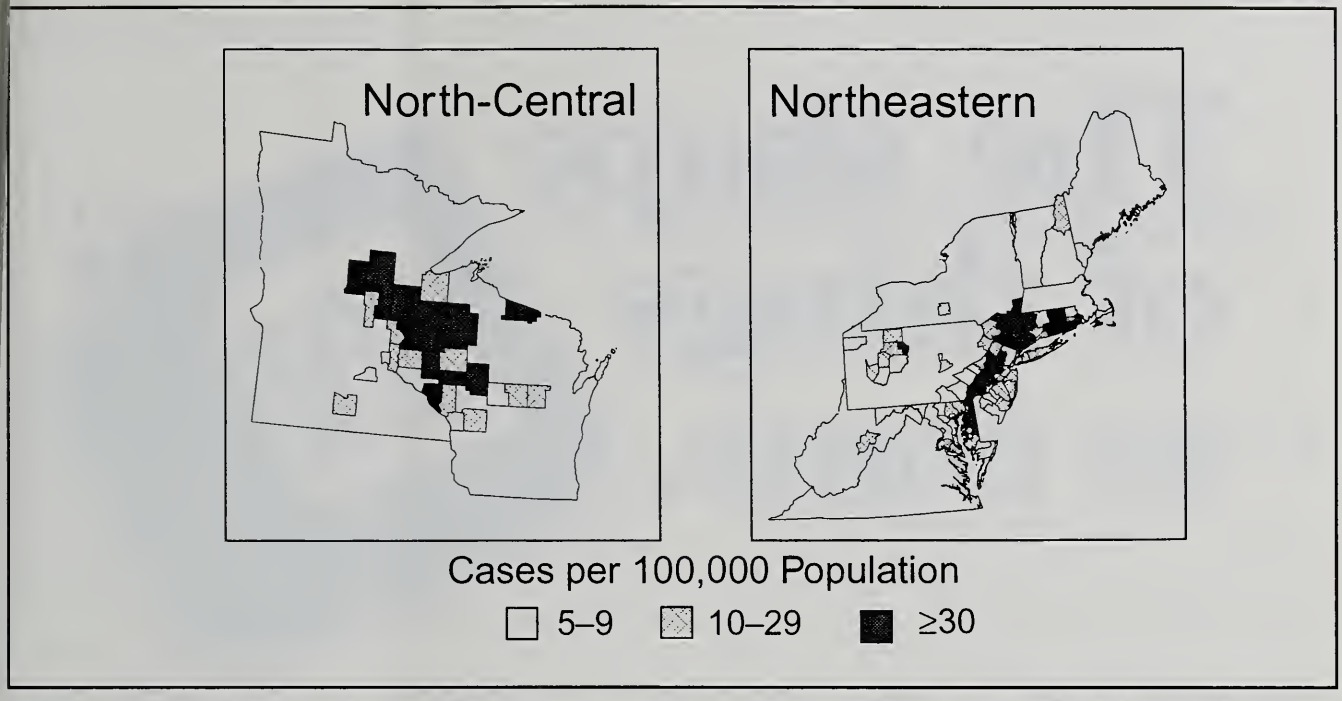

Figure 3.—Reported rates of Lyme disease cases, by county—north-central and northeastern United States, 1995 (Excludes counties with fewer tha five reported cases.

recommended that laboratories use a two-test approach for the serologic diagnosis of LD. Specimens should be tested first by using the more sensitive enzyme-linked immunosorbent assay (ELISA) or indirect immunofluorescence assay (IFA). Specimens that are positive or equivocal then should be tested with the more specific IgG and IgM Western blot (WB). Because sensitivity and specificity of the ELISA and WB vary in relation to the timing of specimen acquisition, clinical and exposure histories must be considered in the interpretation of serologic results.[10]

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Umbilical Cord Blood for Bone Marrow Transplantation

HIGH-dose chemotherapy followed by bone marrow transplantation continues to be widely used in the treatment of malignant diseases (*Medical Letter* 1995; 37:25). The source of the transplant has been autologous or allogeneic bone marrow or, more recently, stem and progenitor cells harvested from peripheral blood (*Medical Letter* 1995; 37:71). Now, blood taken from the umbilical cord and placenta of a newborn infant is being tried as a source of cells to restore the bone marrow. A single collection of umbilical cord blood contains about as many progenitor cells as most autologous bone marrow collections (*HE Broxmeyer, Transfusion* 1995; 35:694).

COLLECTION AND STORAGE—After the cord is clamped at delivery, blood is obtained from the umbilical vein either while the placenta is still in utero, which increases the volume, or after the placenta is delivered. Aliquots are removed for HLA-typing, cell counts and future testing. After addition of a cryoprotectant, the cord blood unit is frozen at a controlled rate and stored in liquid nitrogen.

POSSIBLE ADVANTAGES—Frozen and stored cord blood cells are readily available, avoiding the delay involved in finding a donor, and the risk and discomfort of general anesthesia and bone marrow aspiration. The young stem cells in cord blood may have more proliferative potential than blood or bone marrow cells from an older donor and they may be less immunogenic, decreasing the risk of graft rejection and graft-versus-host disease (GVHD). Cord blood transplants may not require the same degree of HLA matching as bone marrow or peripheral-blood stem-cell transplants and may, therefore, permit successful bone marrow recovery in patients with a relatively high degree of genetic heterogeneity and little chance of finding an HLA-matched unrelated donor. Stem cells in an early stage of development, which are present in cord blood, may be more suitable for gene therapy than blood or bone marrow from an older donor (Kohn DB et al, *Nat Med* 1995; 1:1017; Lu L et al, *Cell Transplant* 1995; 4:493). The risk of viral contamination may also be lower in cord blood (Rubinstein P et al, *Blood* 1993; 81:1679).

POSSIBLE DISADVANTAGES—In the single unit of cord blood available for each procedure, the number of stem cells with long-term marrow-repopulating capacity, which currently cannot be assayed, may not be adequate to repopulate the marrow of some large children and adults. The long-term viability of frozen umbilical cord blood stem and progenitor cells is unknown. The incidence of chronic GVHD, which can cause long-term morbidity, is also unknown. The lower incidence of acute GVHD with cord blood might be a disadvantage for some patients with leukemia who benefit from a graft-versus-leukemia effect. In addition, unlike the situation with bone marrow or older blood donors, genetic or developmental abnormalities in the donor may be undetectable.

CLINICAL TRIALS—Umbilical cord blood transplants have been tried mainly in children. One study of cord blood transfusions from related donors given to 44 children with malignant diseases (mostly leukemia), metabolic disorders or aplastic anemia reported engraftment within 50 days in 100% of patients with malignant diseases and 69% of those with other conditions. The median time to neutrophil recovery was 22 days (range 12 to 46 days) and to platelet recovery was 49 days (range 15 to 117 days). The neutrophil recovery compares favorably to procedures using bone marrow as the source of replacement cells; platelet recovery was slower than that observed after marrow transplantation. Severe (grade III) GVHD occurred in one patient, a low incidence compared to allogeneic bone marrow transplants (Wagner JE et al, *Lancet* 1995; 346:214).

Another trial used partially mismatched placental blood from unrelated donors in 25 patients, mostly children, with various malignant and nonmalignant conditions. Engraftment occurred in 23 patients. Severe (grade III) GVHD occurred acutely in two patients, and chronic GVHD developed later in two others (Kurtzberg J et al, *N Engl J Med* 1996; 335:157, 18 July).

In 18 patients, mostly children with leukemia, bone marrow failure or an inborn error of metabolism, cord

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blood from unrelated donors led to engraftment in all 13 patients who survived more than 30 days; this group included a 15-year-old, 79-kg patient, who had a marked delay in recovery of neutrophil function. Severe (grade III-IV) GVHD occurred in two patients (Wagner JE et al, *Blood* 1996; 88:795, 1 August). Successful engraftment has also been reported in a 26-year-old, 55-kg patient with chronic myelogenous leukemia who was given partially mismatched cord blood; with use of granulocyte colony-stimulating factor (G-CSF), neutrophils began to recover on the twenty-third day (Laporte J-P et al, *N Engl J Med* 1996; 335:167, 18 July).

PRIVATE CORD BLOOD BANKS—Some private companies have promoted collection and storage of umbilical cord blood for the possibility that the newborn infant or a sibling may one day have use for it. The U.S. Food and Drug Administration (FDA) has proposed that all organizations storing or using cord blood be required to obtain an Investigational New Drug application from the FDA (Marshall E, *Science* 1996; 271:586).

CONCLUSION—Umbilical cord blood is a promising source of hematopoietic stem and progenitor cells, at least for children, to replace bone marrow destroyed by disease, chemotherapy or radiation. Use of cord blood may make it possible to restore the marrow in some patients for whom no HLA-matched donor is available.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the *Journal* for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

New Handbook on Child Abuse and Neglect Available

The state Department of Children and Families, in conjunction with the medical community, has produced a handbook for health-care professionals on "Identifying, Reporting, and Managing Suspected Child Abuse and Neglect."

The handbook has been endorsed by the Connecticut Chapters of the American Academy of Pediatrics and the American College of Emergency Physicians, the Connecticut State Medical Society and its Orthopedic Section, and the Connecticut Academy of Family Physicians.

The handbook is designed to:

- Help health-care professionals identify the signs, symptoms, and characteristics of child abuse and neglect;
- Outline the reporting requirements and procedures for mandated reporters;
- Recommend ways to manage suspected child abuse or neglect cases, including ordering diagnostic procedures, using the 96-hour hold, collecting evidence, writing a medical affidavit, and discussing the situation with the child's parents; and
- Explain the role of the Department of Children and Families when a report of suspected child abuse or neglect is received.

Free copies of the handbook are available by calling the Department of Children and Families' Medical Director's office at (860) 550-6460 or the Public Information office at (860) 566-4396.

A Rose by Any Other Name ...

STANLEY M. ARONSON, M.D.

IN 1676 Thomas Sydenham published a brief description of a febrile exanthem, distinguishable from measles, which he called Scarlet Fever. It was an acute, communicable disorder, occurring mainly in children, " ... with rigors and shiverings. Afterwards, however, the whole skin becomes covered with small red maculae, thicker than those of measles, as well as broader, redder and less uniform. They last for two or three days and then disappear." His bedside experience led him to conclude that the disease presented in three forms: *Scarlatina simplex*, the commonest and most benign form; *Scarlatina anginosa*, associated with intense pharyngitis, sepsis, delerium, and exhaustion; and *Scarlatina maligna*, the rapidly fatal form.

For some 140 years following Sydenham's inaugural description scarlet fever remained a major source of morbidity and mortality in children and young adults, accounting for 5% to 7% of all deaths. In Providence, for example, Chapin collected epidemiologic data on 17,625 cases over a 40-year interval, with 1,039 deaths, a case fatality rate of 5.9%. He noted, however, that this rate was not constantly maintained. At the beginning of his observations, in 1880, the rate was 11% and by the 1920s it had dropped to 1.8%. The incidence rate of the disease had also fallen, but not as dramatically. The character of this disease, caused by a strain of hemolytic streptococcus, has indeed changed, not only in Providence but in urban centers throughout the world. By 1970 physicians were no longer required to report the disease and by the 1980s fewer than 10 deaths per year were recorded in the United States. There have been no scarlet fever deaths in Rhode Island for many decades.

There are many puzzles which surround the disease, one small one being: Why scarlet? Why not crimson, carmine, rose, or just plain red? Rarely, indeed, are illnesses formally defined in terms of color. Yellow jaundice, rubella, and black plague, perhaps, but few others. Priority in the use of this color is found in Lancelotti's 1575 paper wherein he calls the disease *scarlatina* from the Italian *scarlatto* which is borrowed from the Arabic *siqillat* [meaning a seal] which, in turn, is borrowed from the Latin *sigillum*, diminutive of *signum* meaning a sign. In antiquity, scarlet was a highly prized dye used in the production of expensive fabrics as well as the coloring agent in seals placed upon important documents. The pigment was extracted from the body of a Near East insect, *Coccus ilicis* which is similar to the western hemisphere cochineal bug, *Coccus cacti*, the source of the dye, carmine.

The name, scarlet, appears in various scriptural contexts. Most frequently, it describes cloth of great splendor and cost [Genesis 38:28, Joshua 2:18] often used in priestly vestments and tabernacle furnishings [Exodus 25:4, 28:5-6]. In Proverbs [31:21] the household of "the good wife" is "clothed in scarlet." The atmosphere around the word chills somewhat in Isaiah [1:18], where the color becomes metaphoric for wickedness: " ... though your sins are like scarlet," And in Revelation [17:1] we read of a woman, upon a scarlet beast, arrayed in purple and scarlet, "and in her hand a golden cup of abominations and the impurities of her fornication."

By the Middle Ages, the dual meanings of scarlet are well-established: as the color of grandeur and royalty ["the king's scarlet"] and as the defining color of venery

STANLEY M. ARONSON, M.D., Editor-in-Chief, Rhode Island Medicine. Reprinted with permission from *Rhode Island Medicine*, May 1996; vol. 79, no. 5, pp. 163-4.

and harlotry. Shakespeare talks of "scarlet indignation" but also of "a scarlet sin" and "foul sins, scarlet iniquities."

To Hawthorne's 19th-century New England, a green letter or a lavender letter would have meant nothing to a Bible-literate readership; a scarlet letter, however, brought forth images of adultery and sin; and Hester Pryne was then obliged to wear a Scarlet Letter, through numberless editions, identifying her shameless adultery. And a century later when Hilaire Belloc wrote his own epitaph, he stated: "When I am dead, I hope it may be said: His sins were scarlet but his books were read."

Scarlet continues to waver in meaning between the fallen harlot [eg, the woman in red] and the less pejorative sense of excessive floral display and luxury [eg, the Scarlet Pimpernel]. In general, though, reds and shades of red tend to lean more closely to the realm of the outcast, the disenfranchised, and the wicked [eg, a crimson reputation, the scarlet whore, the red light district]. Carmine, another shade of red, becomes a woman's name [eg, Carmen, the capricious temptress in Bizet's opera. Women named after other colors Blanche, Olive, Viola, Pearl, Goldie somehow don't readily become seductresses]. Even rose, which is but a pallid reminder of scarlet, manages to become tainted by the image of the lapsed woman [eg, Broadway Rose, Second Avenue Rose, Gypsy Rose Lee]. Red, in addition, has sometimes signified a sense of warning [eg, red traffic light] or ill-omen. Ancient Egyptian scribes switched to red ink when writing hieroglyphs announcing evil or wicked omens.

Still, none of these tangential observations serve to explain why Sydenham selected such a theologically sensitive hue as scarlet to define his infectious pharyngitis. For those concerned more with the biology of streptococcal infection than the historic baggage carried by certain colors, there is always Rhett Butler's immortal response to Scarlett O'Hara: "Frankly my dear, I don't give a damn!"

A Letter from a Patient's Daughter

ELISABETH HANSOT, Ph.D.

MY mother, Georgia Hansot, died recently in the intensive care unit of a major hospital in the eastern United States. She was 87 years old. This is an account of the five days she spent in the hospital from the point of view of her daughter, a 57-year-old professional woman who was charged with her mother's power of attorney for health care. My intent is to convey the experience of one person thrust into the unfamiliar world of hospital routines and intensive care units. My mother's experience died with her; I can describe only what I experienced and what I understood her to be trying to communicate.

This essay could as easily be entitled "There Are No Villains Here." Medical personnel, trained to save lives and not to let patients die, exerted themselves to that end. Hospital staff and the families of other patients in the intensive care unit, as time and ability allowed, tried to comfort. Nonetheless, those five days were among the loneliest and most disorienting that I have ever experienced.

As I think back on it, I am astounded that I had so little inkling of how hard it would be to help my mother have the death she wanted. A widow of six years, my mother had retained the no-nonsense attitude of her Kansan farming origins. She lived in an affluent and stable community on the east coast, and she saw her physician of 25 years routinely for checkups. When we talked together about how she wanted to die, she was clear, consistent, and matter-of-fact. She hoped for a swift death and wanted no unnecessary prolongation of her life.

Entrusted with a general power of attorney and a power of attorney for health care, I believed that I could make decisions on her behalf as she would want them made if she were to become incapacitated. As it turned out, I was woefully unprepared for what was in store for her and for me.

On a spring morning in April, my mother abruptly became ill and was promptly admitted to the local hospital. When I arrived in the late afternoon, she was resting comfortably after a long day of diagnostic tests. Because she had been tired by the day's ordeal, I stayed only briefly, promising to be back early in the morning with newspapers and books. I left my number with the nurse, in case of an emergency.

At 2:00 the next morning, I was awakened by a call from the night nurse. My mother had suddenly taken a turn for the worse and was being transferred to intensive care. I arrived on the hospital floor just as the gurney was being wheeled into the unit. My mother's face was covered by an oxygen mask, but she was able to respond to my voice with an exclamation. It was the last time she would be able to do so.

I tried to accompany her into the intensive care unit but could not. The physician in charge firmly instructed me to stay outside until my mother was "taken care of." An hour later, when I was allowed to see her, she was attached to a respirator and had a feeding tube inserted down her throat.

What had happened? My mother had left a carefully updated power of attorney for health care with her physician, her lawyer, and her offspring, reaffirming her determination not to have her life prolonged by artificial means. Exactly the opposite of what she had wished had occurred;

ELISABETH HANSOT, Ph.D., Stanford University, Stanford, California. Reprinted with permission from *Ann Intern Med* 1996; 125:149-51. *Requests for Reprints:* Thomas A. Raffin, M.D., Division of Pulmonary and Critical Care Medicine, Stanford University Medical Center, MC 5236, 300 Pasteur Drive, Room H3151, Stanford, CA 94305-5236. *Current Author Address:* Dr. Hansot: Department of Political Science, Stanford University, Stanford, CA 94305-2044.

the living will had become invisible just when it was needed most. My mother's physician, it turned out, had not notified the medical team of her advance directive, and the hospital, despite a 1990 federal law that mandates such inquiries, did not ask my mother whether she had such a document. And I, in turn, had neglected to check that the physicians and nurses knew about her desire not to have heroic measures used to prolong her life.

Over the ensuing five days, I came to understand how serious the results of these omissions were. I found that I was dealing with a bewildering array of medical specialists trained to prolong lives, not to let patients die. During the first day that my mother was in the intensive care unit, I asked her physician to make it clear to the attending medical personnel that she had given me durable power of attorney for health care. He readily complied. I was told that my mother had had a stroke and that she would not recover from her hemiparalysis. The physicians hoped to fit her with a tracheostomy tube and send her to a nursing home. From my many conversations with my mother about quality of life and medical care, I knew that she did not want such a life. Yet my mother's wishes, as they were understood by her family physician and her daughter, were now subject to the approval of strangers: the cadre of cardiologists, neurologists, and pulmonologists who attended her.

None of these specialists knew my mother, and they all had their convictions about how to do best by her. Most notably, they varied in the latitude with which they were willing to interpret her wishes (I had become her spokesperson; my only sibling, an older brother, was out of the country). The variance was widest between my mother's wishes and those of the attending pulmonologist: He made it clear that his approach was conservative in such matters. He found it nearly impossible to accept that my mother would prefer death to living with hemiparalysis and a tracheotomy. Over the next several days, our conversations became terser and tenser as he raised such questions as whether perhaps I was an ageist, or an ideologue interested only in abstract principles. I asked the family physician whether another pulmonologist could attend the case, only to be told that all of the pulmonologists accredited to the hospital shared similar beliefs.

My stress built over the ensuing five days as my mother's distress was palpable. She successfully tore out her feeding tube only to have it reinserted and her restraints tightened. An attempt to remove my mother from the ventilator failed; her swollen larynx prevented her from breathing on her own. I had agreed to the removal on the condition that I be allowed to stay with her during the attempt. Afterward, the pulmonologist declared himself pleased that he had been able to reinsert her breathing tube, barely in time. He seemed, however, unaware of how agitated this process had left her. I asked that she be sedated, and an obliging nurse obtained permission for this.

The hospital increasingly came to feel like alien territory, full of medical strangers intent on maintaining my mother's vital signs at all costs. During her ordeal, my mother became increasingly frantic. She continually leaned against her restraints, trying to get her hand close enough to her feeding tube to tear it out again. My sense of being trapped in a nightmare intensified.

In the long days that I spent with her, I learned to read her increasing anguish through her refusals to have her mouth swabbed or to have the secretions in it suctioned dry. One afternoon, she rapped her cuffed hand angrily against the bed bars to get my attention, then motioned toward the tubes that she clearly wished to have removed. The next day, when I was holding her hand, she squeezed mine so hard that I winced in pain, and after that a breakthrough came: We were able to devise a mode of talking to each other.

In response to a yes or no question, my mother nodded or shook her head. Once this mode of communication was clearly established, I was able to ask my mother twice—with her nurse as a witness, and with four hours between each question—whether she wished to die. My very clear-headed and determined mother thus was able, finally, to assert herself for the necessary last time. The nurse informed the physicians of what she had seen. Then the wait began. The hours dragged by as the specialists were persuaded, one by one, to give their consent. Finally, a technician was allowed to pull the tube from my mother's throat. None of the physicians who had attended her was present.

In retrospect, as I review the events of those painful five days, there seems to be no simple explanation for what happened. Physicians are trained to save lives, and most of us would not have it otherwise. In their conversations with me, my mother's physicians related success stories: A paralyzed man with his faculties intact had lived a full decade longer with a tracheostomy; a woman (the mother-in-law of one of the physicians) with a condition similar to my mother's was still alive to that day, semiparalyzed, in a nursing home. I asked this physician whether he thought his mother-in-law was satisfied with this outcome. He responded, honestly enough, that he did not know.

These stories were intended to be helpful, to open up for me possibilities beyond the intensive care unit. But in the end they turned into so many cautionary tales. Most of the stories seemed to define success as survival and ended with the patient's departure from the hospital. The quality of life after that departure was, at best, moot. Everything I knew about my mother made me certain that she did not desire to continue her life in a semiparalyzed condition.

Subsequently, I wondered if the fact that so many physicians attended my mother may have restrained any one of them from helping me figure out how to be effective on her behalf. After all, critical care physicians must work with each other day in and day out. The cost of challenging the judgment or sensibilities of any member of the medical team must be high indeed. Any single case, by contrast, is a brief bird of passage.

In the weeks that followed my mother's ordeal, I listened, with the rest of the United States, to accounts of the deaths of Richard Nixon and Jacqueline Onassis. Because both of them had living wills, the commentators explained, their lives would not be prolonged by mechanical means. Angry and frustrated at the way my mother had died, I wondered: Do you have to be notable to be heard in our society?

All told, I think that my mother was fortunate. In the long run, her wishes were followed; five days in the intensive care unit compares favorably with the experiences of many other elderly persons. But the experience was harrowing, for her and for me. What is routine for hospital staff is all too often the first experience of its kind for critically ill patients and their families. I had a very steep and painful learning curve. This essay is written in the hope that hospitals will devise procedures so that patients and their families can, with less pain and perplexity than I experienced, decide when and how death arrives.

The First "New London Native Son Award" from the New London Rotary Club was Awarded to Dr. Morris A. Wessel

Dr. Morris A. Wessel, retired pediatrician in New Haven and Cinical Professor of Pediatrics at Yale received the first New London Native Son Award from the New London Rotary Club on 27 June 1996. Connecticut's two legislators wrote letters of commendation.

Excerpt of letter received from the Rotary Club of New London, dated May 2, 1996

Dear Dr. Wessel—The City of New London was founded on May 6, 1646 and this year our city has planed a year long celebration in honor of its 350th anniversary.

As a part of this celebration The Rotary club of New London decided to search for a native son or daughter who, having left New London, made a significant contribution top the general welfare elsewhere. We who remain here have, over the years, followed with a feeling of pride, your accomplishments both within your profession and the community at large.

Therefore, it give me great pleasure to notify you that you have been selected to receive The Rotary Club of New London's first Distinguished Native Son Award. It is our intention to present this award to you at a luncheon in your honor on Thursday June 27th. We hope that you will find it possible to accept this award and to be present on the above date.

Looking forward to a favorable response.

Sincerely, Carl Stoner, DDS Chmn., New London.

Excerpt of letter received from the Congress of the United States, House of Representatives, Washington, DC, dated June 27, 1996.

Dear Friends—I must commend you on your wholly appropriate choice of Dr. Morris Wessel as your first Distinguished Native Son Award recipient. In all professions there is an ideal which we wish all members of the profession could achieve. Morris Wessel comes as close to being the model physician as anyone I have ever encountered. His commitment, accessibility, and availability are unsurpassed. His medical expertise and diagnostic ability—even over the telephone—exceed that of most doctor's on-site evaluations.

But, Morris Wessel is much more than a medical expert. Generous and compassionate, he is revered for his sensitivity toward each patient. His gentle manner and easy sense of humor are renowned and have made him a favorite of generations of children; he is their trusted friend. I know all of this from personal experience—we have traveled from Washington to Connecticut just to keep Dr. Wessel as Mia and Ari's pediatrician.

I join with you today in recognizing Dr. Morris Wessel's remarkable achievements: widely respected Clinical Professor of Pediatrics at Yale University and early researcher into the effects of lead poisoning on children; a pioneer in Yale-New Haven Hospital's Rooming-In Project; an accomplished author; a founder of Connecticut Hospice; a member of the Board of Directors of Women's Health Services; and extraordinary pediatrician. Dr. Wessel has served in a number of vital capacities, each characterized by his unusual vision and commitment, a commitment which has made him not only a wonderful father to his own four children, but for all of our children.

I am pleased to help you honor Dr. Wessel today—an outstanding physician and extraordinary person.

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Please send them to:
Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street.
New Haven, CT 06511

Commentaries

His Majesty, MD

I am surely not alone in my being intimidated by physicians. Where else would you go that you would submit to being poked and prodded while being spoken to, usually, in a condescending manner? Not only do we allow this, but we assume a passive role submitting to commands that we might not even be willing to perform for our lovers. Just recently I was at the doctor's and he told me to "lie down." I slowly climbed on the examining table and obediently lay down. Did I question his request? Did I negotiate a different position? Absolutely not.

Visiting the doctor can be similar to going to the priest for confession. One would enter the confessional and spurt out her most intimate shortcomings to a man considered to be superior. He, after listening to this, would decide on a course of action to make you feel better so you could get on with a fresh start. At the doctor's this is no different. We are drawn like flies at a picnic to spit out all our concerns, and he, with his infinite wisdom, will sort through all this information as though his mother were a microchip, and come to a diagnostic conclusion.

I've waited for as long as two hours in my previous orthopedic surgeon's anteroom. Then I've gone from there to the examining room only to be kept waiting another 20 minutes. It's hard not to feel like a piece of cheese on the assembly line of aging while waiting for this doctor. He is one of those habitually busy overachievers practicing assembly line medicine. I've met the perpetually rushed before and often found this to be a facade to avoid contact with people. I wondered if he kept his distance, afraid to come off his pedestal, because he was fearful that on the same ground with patients he would somehow lose command.

Uncertain of what I will be subjected to during the visit, my mind races with fears of what he will ask, what he will do, what he will diagnose me with, and, even worse, the fear of an uncomprehended question. Many times, I've sat on the examining table hoping for a needle rather than a question I didn't understand.

When I was a young girl, the doctor was portrayed to me as a person who was caring, kind, and knowledgeable. No one can dispute a skilled surgeon's ability to relieve pain, cure diseases, and hand people back their lives. Surely, with such an ability we cannot deny our perception of their immeasurable power. It's no wonder that both for us and the physician there begins to dawn a God-like image of this profession. It's no wonder we are willing to sacrifice the needed human side of medicine for a steady scalpel and a high grade-point average.

I want to be able to talk with my doctor and trust that he genuinely cares for me and my well being. I want to be a little girl again that believes doctors want to help people.

When I walked into Dr. K's office for the first time, I felt all the familiar fears exploding inside me. To make matters worse, I had reached a point where I no longer saw a man in a white coat as there to help, but rather myself as an infringement on his time. To my surprise this gentleman entered the room with a smile. I was delighted that, although his exam was thorough, the visit had been fairly painless. He spent nearly 40 minutes with me answering questions about a procedure we had determined was necessary. After leaving his office, I recall commenting to myself, I had just been to the office of a real person.

Years ago we had a dog named "Frenchy." I remember when bringing him to the vet, before entering the building, he would claw the ground frantically and pull on the leash in a desperate attempt to get away. Only after having experienced the operating room can someone fully appreciate what Frenchy was feeling. Fearful of what I cannot control, the operating room becomes a frightening place. And yes, the prospects of scrambling to the floor and scratching frantically in an attempt to get away adds a new dimension to these fears.

When my surgery was complete, I remember Dr. K assuring me that everything went fine. I asked him to give me a hug, and to my surprise he did. It was assurance that I desperately needed. I thought that to break down the wall of fear I had built of the physician it would have taken so much more. The stage had been set for me to feel comfortable enough to say what I needed, a hug, the human side of medicine, from the first visit to his office.

Whenever I talk with someone who might need an orthopedic surgeon I am sure to mention Dr. K. He has since been my primary physician. He has never been so absorbed with himself or with his day that he is without time for a moment of humor. As his patient I delight in knowing that I am not only in capable hands, but will be treated consistently in a caring manner. Regardless of how many patients he is seeing that day when he is with you, you are his only concern. Dr. K sets the standard when it comes to the careful balance of knowledge, skill, and compassion.

He possesses a keen capacity to enlist the patient into doing as he recommends. But be warned, he is pushier than his colleagues. I'd be less than honest if I didn't admit

there has been a time or two when sitting across from him I've thought ... sharp doc ... nice guy ... but could he still breathe if his tie were just a little tighter?

I believe patients need to realize they are contracting with human beings whom they may need to, and should, trust with their lives. Standard care should include the human side of medicine, but it will only become standard when we ourselves break down the walls of our fears and begin to expect it.

I believe physicians need to recognize that they have entered a profession where respect has already been earned by the nature of what they do. But they also need to understand that whenever it seems no longer necessary to continue earning respect the next step is to lose it. Compassion is not difficult; I would characterize it as a smile, a hug, or its equivalent, a little sensitivity or an extra minute with an anxious patient. Perhaps, it would help for physicians to consider that the next time they enter an examining room, the patient in there might be some nut who will write an article about her experience!

Janet Moffatt Morgan

Windsor Locks

Managed Care Is a Scam

The recent merger between Aetna and the managed-care company US Healthcare should convince the public once and for all that managed care is a scam. The multibillion dollar deal is part of the ongoing wealth transfer from the middle class to the superwealthy. The CEO for US Healthcare is taking home $1,000,000,000 (Your eyes are fine. That's one with nine zeros after it.) along with a $25,000,000 corporate jet, $10,000,000 in stock options, and another $10,000,000 in consulting fees.

Managed care has been successful because it has perfected the art of satisfying the vast majority of patients who are healthy while tormenting the sick minority with paperwork, 800 numbers, and bureaucracy to prevent them from obtaining care. Women and their infants are heaved out of the hospital 12 hours after birth. Patients with psychiatric disorders have their most intimate conversations perused by bureaucrats. But this merger is a precursor to a huge taxpayer rip off—managed Medicare.

Medicare is the government program that cares for the elderly and disabled. It has been a huge success, increasing the quality of life for our elderly so that the United States now leads the world in life expectancy for those who are 65 and older. It will also be bankrupt in five years. Our policy leaders hope that managed Medicare will be the white knight. They are sorely mistaken.

Managed Medicare is popular with healthy seniors because it is virtually free. Traditional Medicare has deductibles that must be met annually for both doctors' visits and hospitalization. Only 80% of health-care bills are covered and this does not include dental bills, prescription medicines, eye glasses, hearing aids, and long-term nursing home care. Supplemental insurance must be purchased. In Connecticut, the cost of this insurance rose 27% last year.

Enter the managed-care conglomerates. The United States government is now forking out taxpayer money to managed-care companies that can sign up senior citizens for managed-care plans. These companies offer coverage for prescription medicines along with $5 doctor visits and free hearing aids.

If this sounds too good to be true, that's because it is. In actuality, the managed-care companies are cherry picking the healthy seniors. Some companies deliberately schedule their promotions in areas that do not have public transportation and on the second floor of buildings that lack elevators, thus excluding seniors incapable of driving or walking up stairs. Younger seniors are the preferred customers. Eighty-five percent of 65-year-olds have no major health problems. Their knees and hips are fine. Their cataracts are minuscule and they don't need nursing home care.

But what will happen when they reach 80 and need plenty of care? Suddenly, our managed-care companies will have problems with "capitalization." Seniors with hip problems will be advised to take up bridge while those with large cataracts will be told to add a new pet to the household—a Seeing Eye dog. Political pressure will mount and taxpayers will be forced to pay for the care of these individuals. Meanwhile, the billionaire insurance company CEOs will be laughing from their yachts.

Do not expect our politicians to stop this taxpayer rip-off. They have been bought and paid for. As pointed out in the recent report by secretary of the state, Myles Rappaport, 90% of political contributions come from the wealthiest 2%. Like the Savings and Loan fiasco and the Mexican Peso bail out, the roots of another taxpayer rip-off are being sown with managed Medicare. Nothing will be done until it's too late.

As a physician, I realize that we created this mess by ignoring the increasing costs of health care and fighting attempts for reform. What is needed is single-payer catastrophic coverage for all Americans.

Medicare costs can be controlled by increasing premiums on wealthier seniors and stopping useless treatments at the end of life. Instead, we are getting another scam that will benefit the wealthy and give the middle class higher taxes.

Joseph F. Bentivegna, M.D.

Rocky Hill

Joseph Bentivegna can be contacted on the World Wide web at Http://www.patriotweb.com/bentivegna/ or joe benti@aol.com

Corporate Greed

Buried at the end of Sunday's article, 14 July in the *Hartford Courant,* about the Aetna-U.S. Healthcare merger is this paragraph:

> Aetna chief executive Ronald Compton wants Aetna to follow the lead of US Healthcare in driving down the portion of premiums the company pays out for health care. Where US Healthcare in 1995 spent about 75 cents of every premium dollar it took in on doctors, hospitals, and other medical expenses, Aetna's HMOs spent 86 cents.

On Wall Street, the portion of premiums a company pays out for health care is known as the "MEDICAL LOSS RATIO." That's right—to the corporate mind anything a managed-care company spends on the care of people is a LOSS.

What then is a gain? Why, it's the balance of the premium dollar not "lost" on patients. Part of this is for administrative costs, which include whopping executive salaries: the balance goes into stockholders' dividends.

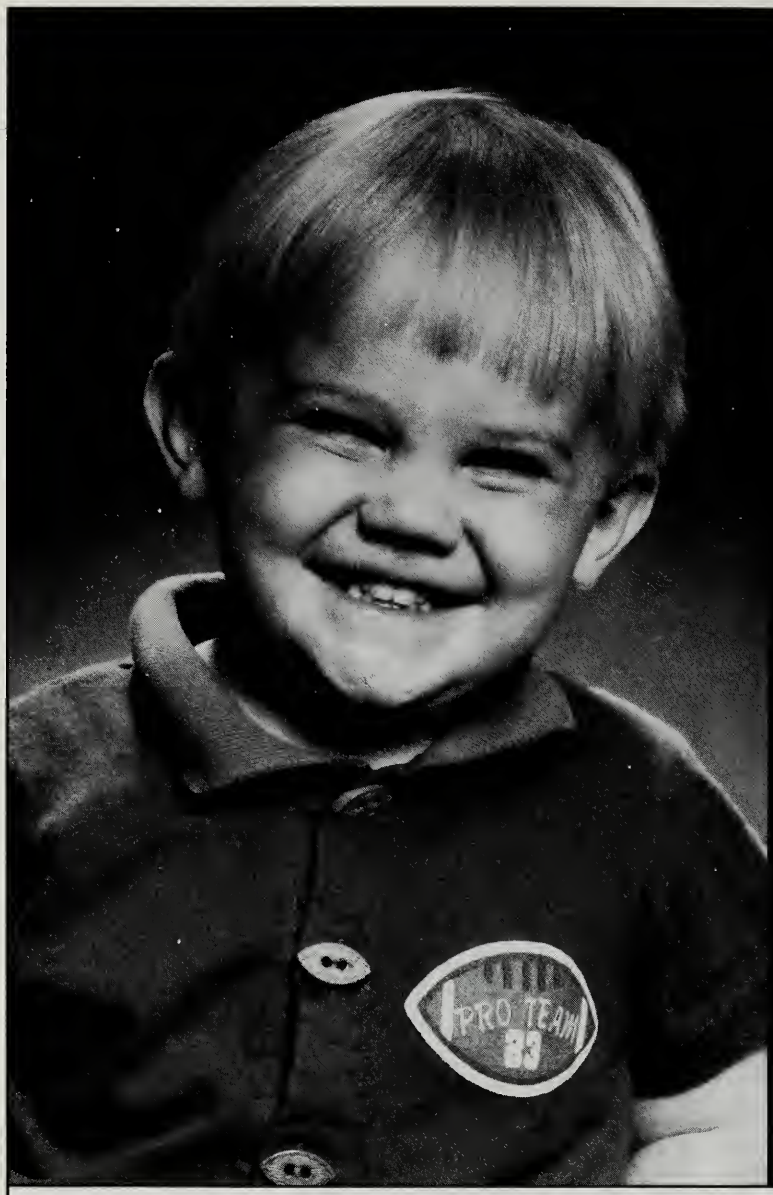
This means that, if Mr. Compton succeeds in emulating US Healthcare, 11% less of the premiums paid to Aetna will be expended on the care of those paying those premiums and 11% more will go to stockholders. (You can be certain Aetna will hold its administrative costs constant.)

To compare what the public is getting for its premium dollars, let us look at the "medical loss ratio" of a major not-for-profit managed-care organization, Kaiser Permanents. It is 90%! Only 10 cents of every premium dollar are spent on administrative expenses. All the rest goes to its patients. Do you suppose any of these people consider that a loss?

Corporate greed, of which this merger is a prime example, is driving our health-care system today, and probably will for years to come. Physicians and hospitals were responsible for escalating healthcare costs in the past, but there is no doubt where the guilt lies today. Consider what US Healthcare chairman Leonard Abramson is making on this merger: $1 billion. A single businessman is receiving 1/1000 of the trillion dollars all 260 million of us Americans will spend on health care in 1996. And they used to talk about greedy doctors....

John G. Freymann, M.D.
A retired professor of family medicine at the University of Connecticut School of Medicine.

Dr. Freymann has no professional or personal connection with Kaiser-Permanente.



A is for Apple,

B is for Ball,

C is for Cancer.

Cancer?

Each year, more than 6,000 children like Adam learn all about cancer and other catastrophic illnesses when they're stricken with deadly diseases. Fortunately, these children have a fighting chance at surviving cancer — the No. 1 killer disease of children — because of strides St. Jude doctors and scientists are making every day in treatment and research. With your support, St. Jude Children's Research Hospital is helping children all over the world live.

To find out more about St. Jude's life-saving work, write to:

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ST. JUDE CHILDREN'S RESEARCH HOSPITAL
***Danny Thomas**, Founder*

50 Years Ago
From *The Connecticut State Medical Journal*
September 1946

The Doctor and His Fee

American physicians have repeatedly expressed the desire to give to the people good medical care at a price which they can afford to pay. It is claimed that suitable adjustments of charges are customarily made under the present patient-physician relationship and that more satisfactory medical care can be given in this way than by the regulative interference of a national compulsory insurance plan.

Proponents of regimentation claim that the fee for service system is hopelessly inadequate and they make much of instances where physicians overcharge their patients. We believe that such overcharges are rare but recently a critic of the fee system told of several occasions where physicians had made charges that appeared excessive to him and to the modest income group of which he spoke. They seemed to be more than could be paid without hardship.

It can be safely said that every time a physician appears to demand all that the traffic will bear he makes a new supporter for socialized medicine, and it is particularly tragic if these new enemies for the medical profession happen to be veterans, as in the instances cited.

Most physicians welcome a frank discussion of fees before treatment is undertaken. Misunderstandings start with a failure on the part of the physician to come to a distinct understanding with his patient ,and a failure on the part of the patient to ask for such an understanding. When asked about the fee, the physician should not evade a definite answer by reassuring the patient that all will be well and that he need not worry about the charges. When a patient receives a bill which he considers beyond his means, he will have good cause for complaint if he is not given the sympathetic and reasonable adjustment of the bill to his circumstances which he was led to believe he would get.

Month after month in the JOURNAL there is repeated an appeal to each member of the Society to feel his public relations responsibility by keeping his individual physician-patient relationship above reproach. Bad practices of a fear profiteering physicians can bring public censure on the whole profession. Organized medicine has been sharply criticized as lacking the courage to discipline its own members. County medical associations can fight socialized medicine in no more effective way than by placing a firm, restraining hand on any member as who thus endangers the freedom of the whole profession. You have the mechanisms. Have you the courage to use them?

Connecticut Blue Cross Changes Its Contract

For the second time in two years Connecticut Blue Cross, the prepaid hospital care plan, has increased its rates. The new rates are four dollars ($4) quarterly for individuals, eight dollars ($8) quarterly for husband and wife or widow and one child, and nine dollars and fifty cents ($9.50) quarterly for family coverage, excluding children 19 years or over. At the same time it has reduced its benefits. It still aims to provide its 560,000 members with the most hospital care at the lowest possible cost. The increased rates are explained on the ground of increased cost of hospital care. For the past year Connecticut Hospital Service, Inc., spent 96 per cent of its income which, allowing for operating costs of less than 10 per cent, is more than it has been receiving.

Reprinted from the *Connecticut State Medical Journal*, September 1946.

50 Years Ago ...*(continued)*

"Shell Shock" Study Shows Fewer Cases in World War II

Hysteria—the so-called "shell shock" of the first world war although probably a majority of its victims never heard a shell fired—persisted on a greatly diminished scale among American troops in the last war, according to an announcement from the Surgeon General's Office.

It was predominantly a mental malady of the last generation. Essentially it is manifested as a syndrome which simulates, without organic basis, some pathological physical condition. A victim will develop, for example, a paralized arm but physical examination shows that the paralyzed area does not follow any single nerve or group of nerves. A man may be suddenly stricken blind but nothing wrong can be found with his eyes or optic nerve.

A hysteric is not consciously faking. For all practical purposes his arm is really paralyzed or his eyes sightless. Questioning often will reveal that the victim has had a hard blow on the arm or gotten a bug in his eye. If such a condition is not recognized it may persist for years and the organ involved may actually become useless permanently through disuse.

At about the time of the first world war this was common enough both among the military and civilians. On the part of the soldier it was an unconscious flight from danger. A hysterically paralyzed arm was a means of running away without suffering any of the penalties.

Shortly after the war psychiatrists began to report that no hysterical cases were coming to their offices any more. Instead they were getting more and more cases of so-called " anxiety neurosis," an overwhelming fear without specific physical manifestations. It was explained that the pattern of reaction of the individual with a somewhat unstable nervous system was changing with the changing times. Hysteria was a disease of a simpler environment.

This persisted into the second world war. Many of the younger military psychiatrists never had seen an hysterical case and knew of the condition only through textbooks.

They talked of "anxiety neuroses," "combat fatigue," and the like. For the most part, they were right. But, according to a study just reported by Lieut. Col. David B. Davis and Capt. John W. Bick of the Army Medical Corps, about one out of five of more than 1,000 neuropsychiatric cases returned to one American army hospital from overseas was actually a victim of hysteria.

"It is evident that hysteria was not of infrequent occurrence in World War Two," they conclude.

William Wallace Lumkin Glenn, M.D.

Last year there was a gathering of physicians and friends to honor Yale cardiac surgeon, Dr. William Wallace Lumkin Glenn for his lifetime achievements in surgery. Those achievements reached the highest level of international recognition. After completing his training in general surgery Dr. Glenn came to Yale-New Haven Hospital in 1948 to begin cardiothoracic surgery, a specialty then in its infancy. Dr. Glenn soon became a pioneer surgeon in many areas, not the least of which was in diaphragmatic pacing, fibrillatory techniques of the heart, and pulmonary artery-superior vena caval shunting for congenital heart disease. Throughout his long and illustrious career, he held to the highest standards of academic and intellectual honesty.

Dr. Glenn stood for academic surgery par excellence. He is in the tradition of William Osler. For Osler the wards in the academic hospital were for patient care, but also, and nearly as important, for student and housestaff education, followed by improvement of patient care and research.

During the celebration, Dr. Glenn, in modest fashion, gave credit to those professors who were inspirational in his career, including Drs. Drinker, Churchill, and Linskog. Many academic surgeons were there that evening, including Dr. David Skinner, Dr. David Sabiston, and Dr. John Elefteriades who gave credit in turn to Dr. Glenn for being an exemplary teacher and having inspired them in their academic careers. Dr. Charles A. Beckman of New Haven, who had the distinction of being Dr. Glenn's last cardiac surgical Winchester Fellow, also gave credit to Dr. Glenn for being an outstanding surgical educator and for inspiring his career as a private practicing cardiac surgeon.

One cannot help but think and wonder how the changes in medical-care delivery, such as managed care and capitation, which at times place the financial interests of the physician and hospital above that of the patient, will affect professors in the academic setting as well as private practicing physicians at community hospitals who teach interns, residents, and fellows their craft and trade of patient care. Will the future generation of physicians be inspired by those physicians who place cost-efficient care above all else, and do it extremely well, as being models to look up to? Will the next generation of physicians look to those peers who are the best business physicians rather than the best patient-care physicians as being their models to look up to?

I do not know the answers to these questions, but I do know that any professor at any academic institution and any community physician teaching the next generation of medical students, interns, residents, and fellows will have the daunting task of having to work much harder to be as inspirational to their students as Dr. William W.L. Glenn was to his apprentices, since the educational task of today's physician-teachers will be much more difficult because of the pressures of managed care.

There is no doubt in my mind, however, that there will continue to be inspirational physician-teachers who will exemplify the sterling qualities of the likes of Drs. Drinker, Churchill, Linskog, and Glenn, men who placed the patient above all else.

Michael M. Deren, M.D.
President

M.D. Health Plan has been through many changes in the past year. The merger with Health Systems International has allowed us many new and exciting opportunities, including a Personal Medical Management System:

"the right service by the right provider at the right time."

Nothing should stand between *you* and your *patients*

We know that the relationship between physician and patient is the most important. As an HMO, our responsibility is to be a resource to those relationships, working closely with our physicians to assist in the direction of patient care in the most efficient way possible while focusing on high quality. Outcome is still the best measure of our success, not the bottom dollar. Just doing the right thing will always be the most cost effective.

It's also important to know that the CSMS–IPA remains *separate* from the HMO and is owned by the Connecticut State Medical Society.

M.D. HEALTH PLAN

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Time

ROBERT U. MASSEY, M.D.

SEVERAL times recently I have heard others, like me in their eighth decade, speak of the increasing pace of time as we grow older, something we all seem agreed upon, like failing memory. It may be the monotony of our days, by which I intend no complaint. I have come to cherish monotony, which is not the same as nothing happening, and resent intrusions upon its ordered course. Each day of the week has its own alloted tasks and rituals, so that all Tuesdays seem alike, and all Sundays the same, and I am put out when anything but the weather changes. The consequence is that time rushes past and twilight falls close upon the heels of "rosey-fingered dawn."

After four years of residency when no two days or weeks were the same and the unexpected always happened and time moved like a video tape on fast-forward, I recall how in my first few months of practice the hours slowed to 120 minutes, and the summer stretched on forever. I had joined a large group practice in the Southwest so there was none of the excitement of finding an office, selecting equipment and furniture, hiring a nurse and receptionist. All that was in place. I simply waited for patients, two or three a day, none in the hospital for weeks, an occasional house call. Time moved like a turtle. The whole day was taken up reading *JAMA*, *The New England Journal, The Rocky Mountain Journal of Medicine,* and finally, anything I could find.

Time and the perception of time passing remain mysterious. Stephen Hawking in *A Brief History of Time* asks "Why do we remember the past but not the future?"

The explanation usually given as to why we don't see broken cups gathering themselves together off the floor and jumping back onto the table is that the second law of thermodynamics forbids it. In other words, it is a form of Murphy's law: things always tend to go wrong. An intact cup on the table is a state of high order, but a broken cup on the floor is in a disordered state.

There are three arrows of time, Hawking explains. First, there is the thermodynamic arrow of time or the direction toward entropy (the shattered cup). Then the psychological arrow of time, by which we feel the direction (as well as the speed) of time from past to future, and finally, the cosmological arrow of time, "the direction of time in which the universe is expanding rather than contracting." If the universe stops expanding, pauses, and then begins to fall in upon itself, toward the "Big Crunch," will the whole show be replayed backward, so that when our time returns, we will remember the future and await the coming of the past, and make a killing on the stock market as Hawking suggests?

Einstein, we all learned in high school physics, related time, the fourth dimension, to the speed of light: the closer we approach that speed the slower time moves, so that if we were to be accelerated to 186,000 miles per second we could hurtle through space toward Orion and after years never be a second older!

Even more mysteriously, the Big Bang theory asserts that not only did the universe begin from a point infinitely small, but that that beginning was the beginning of both space *and time*! Suddenly there was an instantaneous present with no past, only a future. Or was that infinitely small point simply the Big Crunch of a preceding universe, the whole thing expanding and contracting like a beating heart?

Time's mystery draws us to the very edges of reality. St. Augustine recognized that there was no present time, that this moment we call the present is already past and is no more, and the future is always yet to come! Hawking agreed, "... there can be no important difference between the forward and backward directions of imaginary time." Augustine devoted 20 pages in my copy of the *Confessions,* more than five percent of the entire text, to what he calls "this most intricate enigma." He concludes, "It is in thee, my mind, that I measure time." Is this what Hawking means: the psychological arrow of time always must point in the direction of the thermodynamic and cosmologic arrows if there are to be "intelligent beings who can ask the question: Why does disorder increase in the same direction of time as that in which the universe expands?"

My friends have suggested that time moves faster for us septuagenarians because each day, each month, is a smaller percentage of remembered time. A 24-hour day for a 35 year old is but 12 hours for someone three score and ten!

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

As physicians, our hearts have always been with our patients. Our mission saving lives.

Once this was enough.

Today, however, we are called upon to save more than our patients' lives. We are called upon to save their rights as well.

That's why I'm asking you to support the American Medical Association (AMA) as well as your state and local medical associations.

Together, we can achieve real and lasting changes. Already we have made great strides on behalf of our patients. Working together, we are educating a nation about the dangers of "gag" clauses, developing patient protection measures, and launching a wide spectrum of public health initiatives.

During Women In Medicine Month, we gratefully acknowledge the participation and support of all our female members. The AMA now has more women physicians than any other medical association. We encourage all female physicians, residents, and medical students to become members. So please, join now. Your patients' future rights and your entire profession depend on your commitment today.

"Let's keep our commitment where our hearts are. Behind our patients."

Support your patients and your profession. Join the AMA, and your state and county medical associations.

Nancy Wilson Dickey, MD
Chair, Board of Trustees
American Medical Association

American Medical Association
Physicians dedicated to the health of America

This Month's Reading in Review

TIMOTHY B. NORBECK

"The IRS says 36 of its employees, now ex-employees, were convicted of various offenses during the year ended 30 September.... That was down from 52 the previous year....Is this praise?"

Wall Street Journal (31 July 1996)

In a July survey conducted by Gordon S. Black Corporation and funded by the AMA, a majority of public respondents said they would rather pay more for health care in order to select a personal physician (77%), get care right away (76%), use a particular hospital (72%) and have the latest technology available.... In an accompanying physician survey, large majorities of doctors think the increase in managed care has had a negative impact on their clinical independence (92%), the amount of time justifying clinical decisions (84%), the patient-physician relationship (81%), the amount of paperwork required by physicians (79%), and the quality of care (71%).

Federation Communications Weekly
(22 July 1996)

"A recent survey of 1,100 people by the Porter/Novelli public relations agency ranked managed care second-to-last in the list of credible businesses—just above the tobacco industry.... Only 10% of those surveyed thought the managed care industry was credible."

Boston Globe (30 July 1996)

Dumb and Dumber: In April, a Nevada County (CA) judicial candidate, attempting to rectify his low standing among local lawyers, offered to kneel and wash the feet of any lawyer in the county as a gesture of his desire to serve them...."What I offered them was an act of faith, and I don't think that's something a news reporter can understand," he said.... At the scheduled washing, he showed up with a basin and towel—but no lawyer came forth.

Washington City Paper (21 June 21 1996)

Dial Hewlett, Jr., M.D., a physician in Yonkers, New York, received a check from a health insurer for one cent.

Wall Street Journal (18 July 1996)

Dignity Partners, Inc., announced that it will stop buying life insurance policies from AIDS patients because it believes that new medical breakthroughs may take away its customers.... Dignity was one of the first "viatical settlement" companies which buys the insurance policies of terminally ill patients, giving the insured a portion of the policy's value while they are alive, in exchange for the right to collect on the entire policy once the patient has passed away.

New York Times (18 July 1996)

According to a recent Lou Harris poll, four our of five voters rank health care as a key campaign issue in 1996.... Eighty-three percent of those surveyed say the goal should be universal coverage.... About half of those polled support the idea of a guaranteed minimum level of coverage and higher charges for the wealthy.

Deloitte & Touche's
Healthcare Management Update (26 July 1996)

According to a John Hancock study, the average yearly cost in a nursing home is $40,000.... Dementia/Alzheimer's account for 36% of long-term-care insurance claims, bone/joint diseases 17%, cancer 14%, stroke 13%, heart/blood conditions 10%, organ (stomach/liver) disorders 4%, lung disorders 3%, wounds and injuries 2%, and diabetes 1%.

Business Week (19 August 1996)

Cornell University Medical College has offered to waive the first year's tuition for students who agree not to enroll until next year.... The offer came after a higher-than-usual number of students accepted enrollment, prompting concerns that students might fight over microscopes, cadavers, or laboratory space.... Cornell had sent acceptances to 249 applicants, a number that in past years had yielded the 101 to 104 students it had room for.... This year 119 said yes to Cornell and thus far, five students have agreed not to enroll until next year.

New York Times (13 August 1996)

Only in America: A construction worker filed a lawsuit in April for $3.35 million against Sentara Norfolk (VA) General Hospital and four physicians over the loss of his hand.... He admitted to having cut off his hand because he believed it to be possessed by the devil, and twice refused to allow the doctors to reattach it.... However, he claims the hospital was negligent in not asking his family to overrule his poor decision.

Norfolk News (5 July 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

A Response to the Commentary: Primary Care Continuing Medical Education and Managed Care

Letter to the Editor: After reading the commentary of Dr. Edward J. Volpintesta in the May issue of Connecticut Medicine (Volpintesta EJ: Primary care continuing medical education and managed care. *Conn Med* 1996; 605:302-3.), I was compelled to reply. Three concepts which I believe that the author is putting forward are:

1. For a variety of reasons, the practice of medicine has become vastly more complicated over the last two decades;
2. Most CME is expensive because of tuition costs, lodging, and travel;
3. There is a current lack of "practical CME" for primary-care physicians, and that certain specialists are reluctant to impart their knowledge to primary-care physicians because of a perceived economic threat.

Although I agree with the first two of these concepts, I take issue with the third. Since 1969, a CME program which is not only "convenient, practical, and adequate" but also highly effective and educational has been made available through the efforts of the Connecticut Academy of Family Physicians in concert with the Ohio Academy of Family Physicians. This program, of which I have been the editor and education director since 1982, is known as the Core Content Review of Family Medicine. It is a unique home-study program which is currently available at less than $200 per year and which provides 48 hours of CME credits annually. Core Content Review is written by a national faculty of generalists and specialists, is reviewed by an executive committee composed of academic and practicing family physicians, and is distributed to over 6,000 physicians. In addition, the American Academy of Family Physicians has a home-study course that uses a different format from Core Content Review but which also fits the criteria expressed by Dr. Volpintesta. Recently, I returned from a CME refresher course in family practice provided by a large medical center in California. Most of the material presented had been covered in the previous two editions of Core Content Review. The cost of the tuition alone was more than the cost of three years of Core Content Review!

The three remaining concepts put forward by Dr. Volpintesta are:

4. Managed-care organizations have started to sponsor primary care CME, and their role in this activity will increase;
5. Primary-care physicians must become involved in the development of CME by managed-care organizations;
6. Managed-care organizations have the responsibility to develop CME courses for primary-care physicians that are convenient, practical, and adequate.

I take strong issue with Dr. Volpintesta's premise that managed-care organizations have the responsibility of developing CME courses for primary-care physicians. That concept is a dangerous one because of the potential conflict-of-interest issue which it raises. The content of CME generated by a managed-care organization could be readily controlled, even if primary-care physicians were involved in its development. In addressing diagnostic or management issues—and thereby helping to "educate" the primary-care physicians—the profit interests of the organization would take precedent over the medical needs of the patient and the education requirements of physicians. Just as there is " junk science," having managed-care organizations provide CME for primary-care physicians would soon lead to " junk CME."

Robert K. Shapter, M.D.
West Hartford

Dr. Volpintesta responds: I appreciate very much Dr. Shapter's thoughtful comments regarding my essay on primary care continuing medical education and managed care which appeared in the May issue of *Connecticut Medicine*.

First of all, I am familiar with the Core Content Review of Family Medicine, having participated in it on several occasions. It is an excellent and inexpensive home study program for primary-care physicians. I sincerely commend Dr. Shapter for his long-standing contribution as editor and education director and anyone else involved in the program.

My argument is that if managed care is going to increase the scope of knowledge and skills required of primary-care doctors, then it is managed care's responsibility to

collaborate with them to develop the appropriate programs. I didn't mean to imply that organized medicine should abrogate in any way at all its responsibility to maintain integrity in continuing medical education.

The specific area I had in mind—and I guess I wasn't clear enough—was what I call "procedural CME." For example, suturing techniques, minor surgical procedures, nonoperative orthopedics, and dermatological procedures such as cryosurgery and removal of small skin lesions. Acquiring these skills or relearning them requires hands-on experience. The best venue for learning them is in clinical workshops. I don't see how they could be taught through a home-study course. I'm sure that Dr. Shapter would agree.

I agree with Dr. Shapter that if managed care were solely responsible for providing such education it would raise, as he put it, a " potential conflict-of-interest issue." That is why I said in my essay "... it behooves primary-care doctors to collaborate with them [managed care] to assure that such programs do not become unduly influenced by preoccupation in generating profits...." Needless to say physicians must lead the educational process.

I think that it is possible for physicians to develop sound educational programs within the managed-care arena but, only if they pursue it enthusiastically. As far as I know this is not the case.

The metaphors of "junk science" and "junk CME" are good ones. I like to think that any CME for primary-care doctors that does not help them directly and immediately in their daily practice is "junk CME." But hasn't some "junk CME" been around for a long time? Long before managed care came on the scene?

Continuing medical education is a delicate issue and I am not an expert on the subject. I don't know where the truth lies exactly. Some of it, I suppose, lies in the eye of the beholder. Regardless, many primary-care doctors feel that it could be improved. If we are lucky, and if others show the same degree of interest in preserving the integrity and practicality of continuing medical education that Dr. Shapter has, we may be able to create new and better CME programs—particularly in the area of procedural CME—that are practical and inexpensive and as convenient as the Core Content Review, of which Dr. Shapter and his colleagues have every reason to be proud.

Edward J. Volpintesta, M.D.
Bethel

***"Questionable Solicitation of Physicians"*—Member ALERT**

A Letter to the Editor of Connecticut Action: I read with great interest your lead article on *Questionable Solicitation of Physicians*—Member ALERT.

You mentioned Health Designs, Inc. I am embarrassed to admit that I was duped into sending $900 last year to join this "organization." I received nothing for this money. I am a busy physician and totally forgot that I was a "member." The bill was paid for via my credit card.

What alerted me to this scam was a $600 charge that came through my Visa this year that was a "renewal." I did not authorize them to automatically bill me each year. After much wrangling, the $600 renewal fee was taken off my Visa, however, I am still out $900.

I think there is a fear among practicing physicians that we must join every single entity and network that comes along or our practices will disintegrate. Most of us are busy and not knowledgeable enough to truly be able to evaluate the various contracts that come across our desks. It is very expensive to hire a health care attorney to review each contract, and probably not cost effective. I wish there was some way of obtaining a list of the "good ones."

If you know of any way I can get my original $900 back I would be very grateful. If you wish to publish this letter in the next issue of *Connecticut Action* you have my permission but I do not want my name or town utilized. It can be signed "Member CSMS."

Thank you. I wish your article had come out a year earlier.

Member CSMS

"Home Improvement" Star Helps Prevent Blindness

You know him as TVs "Home Improvement" character Al Borland. Now this TV "everyman" is reaching out to help you save your sight. Richard Karn has joined Prevent Blindness America and state affiliates like Prevent Blindness Connecticut, to call attention to the need for eye safety precautions around the home and workplace in a new video titled *In the Blink of an Eye.*

The beauty of a well-kept yard and garden can bring you great satisfaction, but the chores required for upkeep present a number of hazards to the eye. "Did you know that mowing the lawn can be hazardous to your eyesight?" asks Karn. "Wear the right eye protection, because an accident can happen in the blink of an eye." Lawn mowers and weed trimmers can hurl stones and debris. Power tree trimmers, saws and axes can fling sawdust and chips into the air. Even fertilizers and pesticides, which are so great for your garden, can be extremely harmful to the eyes. Nearly 13,000 yard workers suffered eye injuries and were taken to emergency rooms last year.

"Despite medical advances, eye injuries often result in irreparable damage. Yet up to 90% of eye injuries could be avoided if people use safety eyewear and take other precautions." Karn said. "I'm grateful for this chance to encourage all of us to protect our vision."

Karn brings a background in the building trades to his role on "Home Improvement" and his work with Prevent Blindness. During the first season of the series, Karen kept his day job as an apartment manager until the program became a solid success. His second career choice, after acting, would have been to follow in his family's footsteps: he would have been a fourth-generation builder.

Prevent Blindness Connecticut is now renting out copies of the video *In the Blink of the Eye* for a fee to for-profit organizations. Nonprofit organizations will only be charged a shipping fee. The video will be particularly helpful to teachers of technology education classes and industries where eye protection is vital.

On a more personal level, Prevent Blindness Connecticut is offering a "Home Safety Guide" that can help you determine if your home is hazardous to your family's eyes. The booklet includes a short quiz to help you see how safe your household habits are. To order a Home Eye Safety Guide or to rent *In the Blink of an Eye*, call Prevent Blindness Connecticut at (800) 850-2020, or write: Prevent Blindness Connecticut, 1275 Washington Street, Middletown CT 06457-2938.

Prevent Blindness Connecticut, a Combined Health Appeal agency, is the state's only nonprofit health organization dedicated to saving sight through eye screenings, public and professional education, eye safety activities such as Wise Owl Clubs for schools and industry, and research. Prevent Blindness screened 1,048 adults for eye disease such as glaucoma, macular degeneration, and cataracts and 9,526 children ages three to five last year. Over 177 people with serious vision problems requiring treatment were discovered. Prevent Blindness Connecticut is supported by donations, memorial gifts and bequests.

CSMS Produces a Guide to Health Plans

The Connecticut State Medical Society's Committee on Public Affairs is pleased to announce the availability of the Connecticut State Medical Society's, **Which Health Insurance is Right for You? A Guide to Help You Compare Health Plans.** The brochure provides a general overview of traditional indemnity and managed care plans; what to look for when purchasing a health care plan; and a checklist for evaluating plans.

The brochure and order form to request copies for your patient waiting areas has been mailed. In addition to asking you to distribute these informative guides in your office, the Society sent them to all the Connecticut legislators, libraries, hospitals, and senior centers statewide.

From the Executive Director's Office

CALL

SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1996 Semi-Annual Meeting of the House of Delegates will be held at the Ramada Inn, 275 Research Parkway, Meriden. The meeting will commence at 12:30 P.M. on Wednesday, 13 November and will continue until all business has been concluded.

Michael M. Deren, M.D., President
Howard J. Wetstone, M.D., Speaker of the House
John P. Bigos, M.D., Secretary

11:30	Registration of Delegates Luncheon
12:30	Call to Order Business of the House

Guest Speaker: Nancy W. Dickey, M.D.
Chair, Board of Trustees
American Medical Association

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society provides that:

Resolutions may be introduced by any Active, Life Member, Student Member or Postgraduate Physician Member of The Society, in compliance with the following provisions.

a. *All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*

b. *Component county associations or the Student Member or Postgraduate Physician Member Associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc., be considered regular business if they are received later than fifteen days prior to the date of the meeting.*

c. *Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of the Society at any time and shall be considered as regular business.*

d. *Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provisions of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

COUNCIL MEETING

14 August 1996

Attendance

Present, in addition to the Chairman, Dr. Joseph Czarsty, were Drs. Ahamed, Beck, Bobruff, Deren, Eslami, Fischbein, Franklin, Freedman, Geary, Herzog, Hollister, Kamens, Katz, Lesnik, Montegut, Mushlin, Narayanan, Redmond, Sadowski, Sosa, Watson, and Wolfson.

Also present were: Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Morelli, Ms. Norbeck, Ms. Schaffman, Mr. Staples, Mr. Sullivan (all CSMS staff), Mr. Thompson, (FCMA staff), Mr. Coffey and Mr. Fiorentino (HCMA staff), Ms. Harney (NHCMA staff), Mr. Schuman, (NLCMA staff), and Dr. Parke, Dr. Genel, Dr. Catrini, and Mr. Lupino from AMPAC.

Absent were: Drs. Bigos, Brooks, C. Czarsty, Handleman, Keating, Koplin, McDonnell, Scarpa, Schwartz, Tesoro, Timmerman, Wesler, Wetstone, and Zeppieri.

Andrew J. Canzonetti, M.D.

Dr. Czarsty asked the members of the Council to stand for a moment of silence for Andrew J. Canzonetti, M.D., a past president of CSMS and former Chairman of the Council, who died on 26 July 1996.

Reports of Related Organizations

CSMS-IPA: Dr. Vincent Catrini, Chief Medical Officer of M.D. Health Plan, attended the meeting for Dr. David D. Thompson, Jr., President of the CSMS-IPA, who was not able to be present. Dr. Thompson had submitted a written report. Dr. Thompson's report included a review of inpatient, administrative and ancillary costs, and profits. It was stated in the report that the CSMS-IPA remains committed to its original goal of providing the best medical care in the most cost-effective manner. Dr. Catrini gave an update on things they are trying to accomplish between MDHP and the CSMS-IIPA. He announced that they have supported and endorsed the Fairfield County position concerning the State of Connecticut's "consent to release" of confidential records and have made it part of their credentialing approach. He stated that it was important for physicians of the state to stand up for what they think is an appropriate change. He commented on the "drive-though" mastectomy issue. Legislators from both parties have contacted them for their opinion. MDHP would like to push for legislative relief that would be acceptable under managed care when, for humanitarian, social, or psychological reasons, a physician believes that a patient should stay an extra day in the hospital. He emphasized that the CSMS-IPA is entirely controlled by physicians who represent the various counties in the state and they are the ones that run that operation.

CPRO: Dr. Edward Kamens reported that CPRO is going through the last phase of obtaining the contract to do the quality oversight for the Connecticut Medicaid managed-care program.

He stated CPRO has been involved with analysis of mammography in the State of Connecticut, and as an offshoot of that in the Bridgeport area because of involvement of local churches and communities, a new program was tested out called the "Witness Program." The program invited people who have cancer, had cancer, and are in treatment for cancer to come before the church community and give witness to the fact that they are survivors and gave the physicians who accompanied these individuals the opportunity to speak on what cancer signs to look for and other aspects of the illness.

Report of the President

Dr. Deren reported that CSMS has been asked to support and participate in the initiative to reduce underage alcohol use in Connecticut. "Drugs Don't Work" has been selected to be the lead agency for the Connecticut coalition and will be submitting an application for the Robert Wood Johnson (RWJ) grant money. Since only 12 applicants will receive funding for this project a letter from CSMS will significantly improve chances of success. The AMA has been selected by the RWJ to be the national program office for the program. It was VOTED the CSMS Council supports the coalition's grant application and will send a letter confirming the Society's participation in the coalition to reduce underage drinking in Connecticut. It was understood that there would be no funding involved.

Dr. Deren proposed the formation of a statewide PSO (Physician Service Organization) to "put physicians back in charge" and discussed in detail why CSMS should become involved in this project. He said this would be an entity that would provide information statewide, would negotiate and analyze Medicare contracts, would have the infrastructure of an HMO but would not be involved in the risk aspect of one, and would assist physicians in their practices. He mentioned that he welcomed county medical association involvement in the project to the extent that the counties wanted to participate. The key goals of a CSMS-PSO would be to organize, capitalize, and develop physician entities capable of successful operations in all forms of managed care including capitation to foster the growth and provide operational infrastructure for physician-owned entities for the benefit of physicians and their patients; to facilitate individual physicians in their efforts to achieve personal and professional effectiveness and objectives in what they want to do in their particular practice; to assist physicians in operating and managing their practices in a cost effective and efficient manner; and to provide practice management services, such as fee-for-

service billing, collections, etc. There was a prolonged discussion on this issue and several speakers brought to the attention of the Council that some counties had already been involved in the creation of a PSO and all of this should be taken into consideration if a statewide PSO was to be considered. It was VOTED that the Council support the concept of a statewide PSO and authorize the expenditure of up to $130,000 for a feasibility study. It was further VOTED to form a study committee of members of the Council.

Report of the Executive Director

Mr. Norbeck reported on the following items of interest:

Columbia Healthcare Corporation could become the nation's "largest malpractice insurer"—it currently has a pilot project in three different markets insuring about 150 physicians. Columbia/HCA is associated with between 90,000 and 100,000 physicians and could insure many or most of them. St. Paul Fire & Marine is currently the largest malpractice insurer in the U.S. with 45,000 subscribing physicians.

Capitation has been hauled into an Oklahoma City medical malpractice suit on the basis that the HMO and its capitated physician group breached their fiduciary duty to a patient by denying necessary care. The case comes amid rising concerns that managed-care financial incentives may compromise care. Experts are warning against placing too much financial risk on individual physicians without quality safeguards.

An ophthalmologist in Oregon was successful in getting the necessary 73,000 signatures to get an initiative on the November ballot which would ban capitation as a mode of payment. The initiative excludes capitation from a list of acceptable methods for physicians to get paid, which will greatly impact on Oregon HMOs and managed care. HMOs are deeply involved in an effort to defeat it with the assistance of an advertising firm and have called their coalition the "Oregonians for Quality Health Care." Millions will be spent, and the HMOs vow to tie it up in the courts with appeals should the initiative pass.

California was also successful in getting two initiatives on the November ballot which represent the most sweeping effort to date to counter the influence of HMOs. The initiatives would ban financial incentives to physicians or nurses for delaying or denying care, require second opinions before insurers can deny care recommended by physicians, and prohibit gag orders in HMO contracts. Ralph Nader and CNA support one of the initiatives which would place limitations on premium increases for health insurance, impose fees on health-care mergers and prohibit HMOs from mandating out-of-court settlements for consumer grievances and establish a nonprofit consumer watchdog board to advocate on behalf of patients. Predictably, insurers will resort to the same tactics as in Connecticut, claiming the loss of 27,000 to 60,000 jobs and increased medical insurance premiums. One of the authors of the initiative stated that it is the same old story of powerful HMOs and insurance companies trying to distract voters with a phony study concocted by industry and pseudoeconomists.

COMPAC Update

Dr. Beck reported that the Board was meeting immediately following the Council meeting and two legislators were going to appear before the group. He reported that COMPAC is alive and well and as of the July report from AMPAC a total of 455 people signed up, and due to a recent mailing the total has risen to 573, which is 77% of AMPACs GOAL OF 683. COMPAC enrollment, based on membership of CSMS membership of 6,600, is 8.7%. Ninty nine point eight percent of members of the AMA House of Delegates are members of AMPAC. He stated that CSMS has a first-rate team working up at the legislature.

Physician Health Program

The Physician Health Program requested the Council to support the concept of negotiating changes to the protocol governing participation of established medical organizations in the implementation of Public Act 84-148 which would be designed to enhance the confidential provisions in the existing protocol. It is the intent of the Physician Health Program to seek the advice and guidance of the county physician health committees regarding proposed changes, as well as utilizing knowledgeable resources within the Federation of State Physician Health Programs to design appropriate enhancements to the protocol. It was VOTED to support the concept of negotiating changes to the protocol to enhance the confidentiality provisions which currently exist. It was noted that changes proposed would be brought to the attention of the Council.

Report of AMA Delegation on June 1996 Meeting

A comprehensive report on the meeting was distributed to all members of the Council with their agenda. The report noted that the House agenda contained 104 reports and 210 resolutions on a wide variety of issues which included socioeconomics, science, medical education, public health, and the structure of organized medicine, including future representational issues in the House of Delegates. Drs. Kamens, Freedman, and Eslami elaborated on some of the issues.

AMA Federation Study

It was VOTED to endorse Dr. John Franklin to serve on the AMA Federation Transition Team (Federation Coordinating Team.)

Report of Ad Hoc Committee on Data Release

At the last Council meeting, action on the statistical report presented was tabled and returned to the committee with the request that a narrative report accompany the statistical report. Dr. Kamens reviewed the new narrative report submitted and also outlined what data available from various sources. It was stated that no centralized sources for data exists and there is no interrelationship among sources in any organized fashion. It was reported that the obvious conclusion to be drawn is that there does not exist, at this time, a focused, centralized reliable data source in our state. There was a lengthy question and answer period and it was finally VOTED to refer the issue back to the committee with the request that they bring to the Council definitive recommendations.

Correspondence

The following communications were received as information:

A letter from Neil H. Brooks, M.D., expressing his appreciation for the Council's support of his candidacy for President-Elect of the American Academy of Family Practice.

Two letters from the Connecticut Society of Eye Physicians thanking CSMS for its assistance in the legislative conflict regarding optometry.

Dates of Future Meetings

Council Meeting—Thursday, 3 October 1996

House of Delegates Meeting—Wednesday, 13 November 1996

MEMORANDUM

The Connecticut Attorney General and eleven other state attorneys general have sued tobacco companies to recover state funds used for the care and treatment of people who suffer from tobacco related diseases, to prevent the tobacco companies from advertising to minors, and to prevent other illegal conduct by tobacco companies. These lawsuits, brought by a bipartisan group of public officials, are being opposed by tobacco companies which will spend millions of dollars defending the lawsuits.

The Connecticut Attorney General requests your help in battling the tobacco companies. There is a special fund that has been established by the State of Connecticut to support this action.

For more information, we urge you to contact: Office of the Attorney General: Attention Richard Kehoe, Special Counsel / Legislation, 55 Elm Street, Hartford, CT 06141.

Michael M. Deren, M.D.
President, Connecticut State Medical Society

John Bigos, M.D.
Chairman, Public Issues and Legislation Committee
President-elect, American Cancer Society, CT Division

The Premium Dollar
CSMS-IPA Report to the CSMS Council
14 August 1996

DAVID D. THOMPSON, JR., M.D.

AT M.D. Health Plan, we have a very well defined breakdown as to where every penny of the premium dollar goes. Since the affiliation with HSI, more money goes to the CSMS-IPA and less goes to administration, inpatient care, ancillary services, and profit than before.

The Medical Loss Ratio, the amount of money spent on medical care, is guaranteed at M.D. Health Plan to be no less than 79% of the premium dollar. Many of M.D. Health Plan's lines of business have medical costs that greatly exceed the contracted minimum. For the Medicare product, the medical costs have a contracted minimum of 85%. The State of Connecticut employees are under contract with medical costs that are more than 86%. The Medicaid product has medical costs that are even higher.

Inpatient Costs

HSI came to us with a system to control inpatient care which was physician invented, physician adjusted, and physician implemented, and also the most successful at controlling costs of any system in the nation. This system is extremely successful today at M.D. Health Plan. Last year, inpatient costs were reduced enough so that premium could be reduced to match the market without reducing the amount given to the CSMS-IPA to cover its share of the medical costs. The inpatient system always works on a physician-to-physician basis. Recently, a hospital discharge coordinator complimented the system by noting that proper medical care was the basis for decision making instead of some arbitrary number of days from a chart. The patient's attending physician and a physician from the plan work together to decide the best care for the patient. She feels this makes M.D. Health Plan the best with which to work.

Administrative Costs

Since joining HSI, total administrative costs have been cut. At first it seemed that to reduce M.D. Health Plan's costs, the downsizing was a bit heavy handed. However, HSI did not feel they needed a CFO when a comptroller would suffice at less that 40% of the cost. Legal was taken in-house with significant cost savings. Many other areas were adjusted as well for a total reduction on the order of $700,000 a year.

Administrative costs should actually be looked at on a per member basis. With 180,000 members and continued rapid growth, our per member costs continue to go down. The economies of scale are immense. Computer systems especially those to help with medical management are astronomically expensive. If you don't have many members over whom to spread the cost, it is a major drain. Many of the HSI systems are being used and constantly upgraded for 2.5 million members nationwide. A $2.5 million enhancement is only $1 per member. If you are just starting up with 5,000 to 10,000 members you simply could not afford it at $500 per member.

Some feel that administrative costs should be zero. This is fine as long as no one ever files a claim or wants to be paid. Larger organizations are the ones with the economies of scale to get all the administration done cost effectively. Much is said about high salaries of HMO executives. With 2.5 million members, less than 50 cents per member per year still gets the CEO of HSI a very good salary. Where there are only 10,000 members, that yields less than $5,000 a year.

DAVID D. THOMPSON, JR., M.D., internist of Niantic, is president of CSMS-IPA. This report was presented to the CSMS Council meeting 14 August 1996.

Ancillary Costs

With the help of HSI's national experience, contracting for ancillary services have reduced the expenses of the CSMS-IPA. Fortunately, these never were a major cost, but any savings result in more money available for the physician provided medical care.

Profits

M.D. Health Plan has budgeted for a smaller profit on a per member per month basis after the HSI affiliation than before. More members will bring in more total profits, and this has been happening and hopefully will continue to happen. The budgeted profit is in the $2-3 range on a PMPM basis depending on the product line.

Some feel that HMOs should have no profits, but even if you added this profit to the $64.33 PMPM CSMS-IPA capitation it would not have a major impact. Without profits, what is the basis for any investment?

The Market

For those still looking for a villain in this very disruptive switch to managed care, the Market might be a viable culprit. Competition among managed-care companies has been extreme. Premium costs are going down. More and more savings have to be found just to come out even. In the good old days, indemnities would just add up all the costs and pass them on in higher and higher premiums. Just before the arrival of managed care, increases of 15-25% a year were the norm.

Entering the market in 1996 would be incredibly more dangerous than entering in 1986 as we did with M.D. Health Plan. The HMO premium is at least 25% below the old indemnity competition. Going into the market with a provider friendly product with a 25% price differential would get a few laughs but that's about all. Cutting premium by 25% requires considerable hard work and significant costs for medical management. Good luck to anyone who doesn't have adequate membership over which to divide these costs or doesn't believe that any effort or expense is necessary.

Many HMOs have found themselves losing money as they try too hard to buy business at premiums that cannot cover their costs. Fortunately, M.D. Health Plan has a selling point in the market, broad access and no gatekeeper. This has allowed us to sell at a premium differential and has given the CSMS-IPA a higher capitation than any other group. Keeping costs down without a gatekeeper has proven to be extremely difficult, but M.D. Health Plan and HSI are dedicating significant resources to these endeavors.

CSMS-IPA

CSMS-IPA remains committed to our original goal of providing the best medical care in the most cost effective manner.

The Board of Directors of the CSMS-IPA has remained true to its original mandates.

1. Broad based with an any-willing-provider approach to CSMS members who wish to participate. If there is any dislocation of patients, it can only happen because the physician chooses not to join the CSMS or the CSMS-IPA. We believe that patients should haven right to choose their own physicians. We do not believe in deselection. We do not believe in economic credentialling. Recently, the credentialling criteria were reviewed and it was reemphasized that economics, utilization patterns and the like are not part of the process.
2. Open access with no gatekeeper is an expensive freedom, but one to which we remain committed. Considerable effort will be required to keep our cost structure competitive, and new ways of controlling utilization will have to be devised and implemented. Patients can access their specialists without burdensome and restrictive referrals. Primary-care physicians are not chastised for referring too much, since restricting referrals is not part of their job as it is with most HMOs.
3. No individual physician capitation is allowed. Putting an individual physician's pocketbook between the patient and proper medical care should be illegal but certainly is immoral and unethical. Physicians should not even be in the position where withholding care leads to personal financial gain.
4. Physician control of every aspect of medical care delivery is what CSMS-IPA is all about. The 24 member Board of Directors of CSMS-IPA is 100% physicians. We make all the decisions. No one likes fee schedule reductions, but when they have to be made, it's best that they are made by physicians. All utilization decisions, initially and more importantly on appeal, are made by physicians. As the going gets even tougher, it will become even more important that the CSMS-IPA with its all-physician Board of Directors and all-physician committees continue to provide a physician run alternative in the market.

We need your continued support.

BOOK REVIEW

The Limits of Medicine: How Science Shapes Our Hope for the Cure. Edward S. Golub, Ph.D., xii, 258 pp. New York: Times Books, a division of Random House, Inc. 1994. Price: $23.00. ISBN 0-8129-2141-0.

With a health-care system throwing itself headlong into the arms of profit-seeking corporate America, where dollars spent on medical care count as medical losses, and where profit is the chief goal, and the work of doctors, nurses, and hospitals are but a means to that end, a thoughtful look at where we have been and a serious reflection on where we ought to be going may well be called for. Professor Golub, biologist, immunologist, ethicist, and historian has managed this by guiding the reader up the mountain of medical history and from that vantage point surveying several roads into the future. The first two parts of *The Limits of Medicine*, "Framing the External World" and "Framing the Internal World"comprise a fairly rapid run through 25 centuries of medicine and its social contexts, through what he calls *La longue durée* of Hippocratic and Galenic medicine, through the beginnings of scientific medicine, about 1850, right up to "big science" and the Human Genome Project. The third part, almost a second book or long essay, is a reflection on what may and what should be our road ahead: "Framing the Future."

The everyday experience of disease and death marked 95% of those many years that began with Hippocrates, and only began to change sometime after 1850. While Golub leaves the impression that most of the mortality during that long period in our recorded history, millennia that extend far back before the 5th century B.C, was the result of infectious disease, that is hardly the whole story. It is true that the decline in deaths after 1850 came about because of a decline in infectious disease, especially tuberculosis, typhus, and cholera, two thirds of the deaths were from other causes. Nor, as he points out, was the fall in disease mortality attributable entirely to medicine. Pasteur and Koch happened along in the second half of the 19th century, as did Lister and aseptic surgery, but there were already serious efforts to improve the public hygiene and the quality of hospital care, and all, combined with a rising standard of living contributed, as Prof. Golub makes clear, to a decline in infectious disease mortality.

"'Pasteur' and the Authority of Science," is a chapter heading, but also an apt characterization of the rapid rise of science and the "power of humans to change the world" that marked the late 19th century, at least in Europe and America. "Pasteur" in quotation marks because he, more than Koch or Lister or Snow or Liebig or a hundred others, was the incarnation of that optimistic era, the "Triumph of Science."

> In the popular mind, "Pasteur" had been the reason for the change. We have seen, of course, that it was public health, sanitation, nutrition, and better housing that were responsible for the changes, yet as Edward Kass noted in his lecture at the Society for Infectious Disease in 1971, science received the credit. This is a very important point, not because the placing of credit is important in itself, but because if we have a false understanding of the past, we are liable to have false hopes for the future (p. 94).

That, in fact, is the core of the message in *The Limits of Medicine*. In the author's view the "most important contribution [of science] to medicine" is "the idea of specific causes of disease."

In part II, "Reframing the Internal World," Golub early on reminds us of Thucydides' account of how those who recovered from the plague of Athens "fondly imagined that they could *never die of any other disease in the future* [author's emphasis]. Here we read of the therapeutic and preventive revolution that began with Jenner and may have ended with the present and the Human Genome Project.

> After two millennia of framing health and disease in general terms, the paradigm change initiated by Pasteur, Bernard, and Virchow is so complete that we leave the long twentieth century with the prospect of the ultimate in specific medicine, the manipulation of our genes (p.201).

And, may I add, the possibility, perhaps the certainty, of creating a new species, *Homo sapientissimus sui factus.*

We live now in an age of unrealistic expectations like those who recovered from the plague in Athens 2,400 years ago, expectations that we shall be able to achieve only by devoting more and more and finally all our resources to biomedical research, to achieve a "conquest of disease" and finally overcome death itself. Jenner and smallpox, Pasteur and rabies, Salk and Sabin and polio, and soon, who knows? Yet our author, a bioscientist himself, is saying something quite different:

- *We can quickly begin to stop relying so heavily on the promise of high tech solutions to problems for which low tech solutions already exist.*
- *We can begin to replace the "penicillin mode" of expectations from therapies with the "insulin mode."*
- *We must begin the slow and difficult process of changing our views of aging and death* (pp. 220-222).

The Limits of Medicine is a thoughtful, and at the same time entertaining, book of medical and social history, including some serious reflections on what has become for many an era of technological hubris, the "technologi-

cal imperative," driven now by profit coupled with laudable goals that are in the end unrealizable. It is a somewhat uneven but pleasant review of medical history, all of which would not be essential to making the real point of the book, but is nevertheless a good read. Golub never mentions Vesalius or Osler or Louis or Wells or Morton but I guess he can be forgiven for that. His history was not intended to be all-inclusive nor foot-note scholarly ("This is not a scholarly work" [p.227]), but he does cite a number of my favorite medical historians! His message is critically important.

There are a few errors, some undoudedly typographical. Death rates for diphtheria in New York in 1896 are given as 785 per 100,000. More likely 78.5; tuberculosis death rates, the greatest killer of all, were only about 350 per 100,000. Voltaire's dates are given as 1649-1778, surely a typo, the 4 and 9 are transposed. Trichinosis probably did not exist in the Middle East when the Jewish dietary laws first went into effect (p. 27). Pork was forbidden because the pig is an imperfect animal since it parts the hoof but does not chew the cud, not for public health reasons! Golub mentions the Black Death or plague arriving in Europe first in 1348. Actually, the pandemic arrived in southern Europe a year or two before that; moreover, the plague of Justinian in the 6th century was very likely bubonic plague. All minor; more substantive may be some of the historical analyses, but I leave that to real historians who may be counted on to be quarrelsome.

Robert U. Massey, M.D.
Editor

IN MEMORIAM

ALBIS, FRANCIS J., Medical College of Wisconsin, 1946. Dr. Albis, a retired pediatrician and dermatologist, served as medical advisor to the East Haven public school system for nearly 20 years. He served on the staff of both St. Raphael and Yale New Haven hospitals. Dr. Albis was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Albis died 2 June 1996 at the age of 73.

BRADLEY, E. TREMAIN, Cornell University Medical College, 1936. Dr. Bradley, a former general surgeon in Norwalk, specialized in thoracic and cardiovascular surgery during his 37 year career. He served as the director of the Department of Neoplastic Diseases at Norwalk Hospital for several years until his retirement in 1978. Dr. Bradley was a member of the Fairfield County Medical Association where he served as a delegate and councilor to the Connecticut State Medical Society, the Connecticut State Medical Society where he served as president from 1967 to 1968 and served actively on numerous committees for over 15 years, and the American Medical Association. Dr. Tremain died 18 August 1996 at the age of 87.

CALLAHAN, JAMES L., Georgetown University School of Medicine, 1945. Dr. Callahan was a general surgeon in Hartford, New Britain, and Newington. During his 30-year career, Dr. Callahan was honorary attending surgeon at New Britain General Hospital and St. Francis Hospital and Medical Center, staff surgeon at Hartford and Mt. Sinai hospitals, clinical instructor in surgery at the University of Connecticut School of Medicine, and on the consulting staff of the Hospital for Special Care in New Britain. He also served as the medical director of the Travelers Insurance Company until his retirement in 1991. Dr. Callahan was past president of the New Britain Medical Society, a member of the Hartford County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1970 to 1971, the Connecticut State Medical Society, and the American Medical Association. Dr. Callahan died 4 August 1996 at the age of 76.

CANZONETTI, ANDREW J., University of Chicago Pritzker School of Medicine, 1944. Dr. Canzonetti's medical career involved him in surgery, health care management, education, and public service. In the 1950s, Dr. Canzonetti opened a private practice in New Britain and attained senior surgical positions at New Britain General Hospital and Bradley Memorial Hospital. In 1972, he joined Scovill Inc. of Waterbury as medical director, later returning to New Britain General Hospital as senior vice president for medical affairs. He served on the University of Connecticut Board of Trustees for 16 years during the school's period of greatest growth, beginning in 1976, and served as chairman for 12 years. Dr. Canzonetti was an original incorporator of the CMIC Medical Insurance Company. He founded and served as president of the Hartford County Standards Review Organization and Health Care Plan. In 1989, he was awarded the Robert U. Massey, M.D. Award for Distinguished Service by the Capital Area Health Consortium. The award honors an individual or organization that has contributed to the advancement of cooperative arrangements among health-care providers in the capital region. Dr. Canzonetti was a member of the Hartford County Medical Association serving as president from 1970 to 1971 and, the Connecticut State Medical Society where he was active on numerous committees and where he served as president from 1981 to 1982, and the American Medical Association. Dr. Canzonetti died 22 July 1996 at the age of 75.

CARANGELO, JOHN, Tufts University School of Medicine, 1938. Dr. Carangelo was in private practice from 1947 until his retirement in 1990 specializing in obstetrics and gynecology. He had served on the staff of St. Francis Hospital and Medical Center since 1947 as Senior Attending Physician of Obstetrics and Gynecology, Chairman of the Department of Obstetrics and Gynecology, and as Assistant Director of the obstetrical and gynecological clinic. Dr. Carangelo was an assistant clinical professor at the University of Connecticut School of Medicine. Active in many local, state, and national organizations relating to obstetrics and gynecology, Dr. Carangelo was a member of the Hartford County Medical Association the Connecticut State Medical Society. Dr. Carangelo died 22 August 1996 at the age of 81.

DITERS, EDWARD N., University of Tennessee College of Medicine, 1948. Dr. Diters maintained a private practice in Canton prior to his retirement in 1990. He served as the physician for the Canton School System and the Volunteer Fire Department and was active on several boards for the Town of Canton. Dr. Canton also served as Assistant Medical Examiner for the State of Connecticut for 15 years. He was a member of the Hartford County Medical Association where he previously served as an alternate delegate to the Connecticut State Medical Society, the Connecticut State Medical Society where he served on the Committee on Rural Health during the 1960s, and the American Medical Association. Dr. Diters died 13 August 1996 at the age of 72.

HAINE, JOHN W., Albany Medical College of Union University, 1943. Dr. Haine retired from his Stamford practice of internal medicine and cardiology in 1989. He

served on the staff of both St. Joseph Medical Center and Stamford Hospital. Dr. Haine was a member of the Fairfield County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1970 to 1983, the Connecticut State Medical Society where he served on the Committee on Public Health from 1978 to 1987, and the American Medical Association. Dr. Haine died 11 August 1996 at the age of 79.

HARNESS, JOHN H., National University of Ireland, Faculty of Medicine University College, Cork, Ireland, 1954. Dr. Harness maintained a family practice in Darien for more than 40 years and was associated with St. Joseph's Hospital and Stamford Hospital. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Harness died 29 June 1996 at the age of 70.

MORIARTY, JAMES P., University of Vermont College of Medicine, 1947. Dr. Moriarty was the director of the Department of Family Practice and chief of medical staff at St. Joseph Medical Center until 1980. Past president of the Stamford Cancer Society and the Stamford Medical Society, Dr. Moriarty was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Moriarty died 30 July 1996 at the age of 74.

OZCOMERT, SEDAT, Tip Fakultesi Ankara Universitesi, Turkey, 1947. Until his retirement in 1988, Dr. Ozcomert maintained a family practice in Danbury and Ridgefield. He served on the staff of both Stamford Hospital and St. Joseph Medical Center. Dr. Ozcomert served as an assistant medical examiner for the state of Connecticut for 30 years. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Ozcomert died 20 June 1996 at the age of 75.

POVERMAN, DAVID A., University of Vermont College of Medicine, 1929. Dr. Poverman retired from his New Haven practice of Orthopaedic Surgery in 1990. He was associated with both the Yale New Haven Hospital and the Griffin Hospital. Dr. Poverman was a member of the New Haven County Medical Association, the Connecticut State Medical Society, where he served on the Committee on Hospitals and the Committee on Rehabilitation in the early 1970s, and the American Medical Association. Dr. Poverman died 22 December 1995 at the age of 88.

WARPINSKI, MARION A., Tulane University School of Medicine, 1946. Dr. Warpinski retired from the practice of anesthesiology in 1991. Dr. Warpinski was a member of the Tolland County Medical Association and the Connecticut State Medical Society. Dr. Warpinski died 16 January 1995 at the age of 72.

YOBURN, MICHAEL M., Boston University School of Medicine, 1939. Dr. Yoburn was a general practitioner in Danbury for 46 years and was associated with Danbury Hospital. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Yoburn died 29 August 1995 at the age of 81.

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Correction

In the August issue of *Connecticut Medicine*, in the article by Surendra K. Chawla, M.D., Jose Missri, M.D., and Richard Wessel, M.D., titled *Mitral Valve Repair for Mitral Regurgitation Utilizing Intraoperative Transesophageal Echocardiology—Late Results,* there was an editorial question mark on the bottom of page 456 which had been answered and should have been deleted before publication

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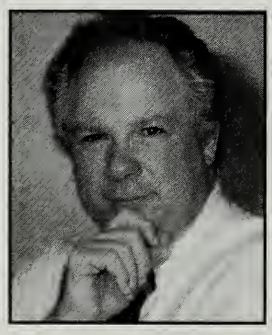

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The Epidemiology of Non-Hodgkin's Lymphoma

ROBERT S. KIRSNER, M.D. AND DANIEL G. FEDERMAN, M.D.

Introduction

SIGNIFICANT progress in the understanding of non-Hodgkin's lymphoma (NHL) has occurred in the past three decades. Among the advances in NHL include an elucidation of its epidemiology. In this article, we review some new insights in the epidemiology of NHL.

Definition

Lymphoma, a malignancy of lymphocytes, may be divided into two broad categories: Hodgkin's disease and non-Hodgkin's lymphoma (NHL). By definition, NHL is a collection of many heterogeneous malignant lymphomas that have been grouped together in order to distinguish them from Hodgkin's disease. Therefore, in some ways, the diagnosis of NHL is a negative definition. That is, "you have a lymphoma that is not Hodgkin's disease." The classification of NHL is complex with a number of classification schemes employed. None of the classifications of NHL are based on etiology or even pathogenic considerations. Until about 1960, most authors divided NHL into lymphosarcoma and reticulum cell sarcoma.[1] Since then, a number of other classification systems have been utilized. Much of the current literature is based on the Rappaport classification developed in 1956.[2] Rappaport classified NHL by lymph node morphology, subdividing NHL into nodular or diffuse, and further dividing those two categories by the predominant cell type and differentiation. The importance of understanding the classification schemes is that epidemiologic studies, for the most part, have not differentiated NHL into subcategories. Additionally, over the past 20 years there has been a realization that there are at least two different types of lymphocytes (the cells which undergo malignant change) based on 1) where these lymphocytes undergo final differentiation prior to lodging in peripheral lymphoid organs and 2) the function of the lymphocytes. The two types of lymphocytes are T lymphocytes and B lymphocytes. T lymphocytes undergo differentiation in the thymus and B lymphocytes undergo differentiation in the bursa of Fabricius in birds, and in mammals in a bursa equivalent.[3] The majority of NHL are B-cell malignancies, but importantly, most epidemiologic studies have not differentiated between the two.

Abbreviations Used in Text

NHL = non-Hodgkin's lymphoma
BL = Burkitt's lymphoma
ATLL = adult T-cell leukemia/lymphoma
HTLV-1 = human T-cell lymphotropic virus-1
KSHS or HHV-8 = Kaposi-sarcoma-associated herpes virus

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Incidence and Mortality

Worldwide incidence figures vary markedly among different populations, with low rates in rural Poland and high rates in both the non-Jewish population in Israel and Jews in Israel. The American Cancer Society estimated that the incidence of NHL in 1996 in the U.S. is 52,700 with a slight predominance of males, while the estimated annual mortality is 23,300.[4] Since the 1950s incidence rates have increased 123%.[5] Although mortality rates are rising, they are rising less fast than the incidence rates. There is a higher incidence with advancing age and as longevity has increased this in part may account for the increase in incidence. Cantor and Fraumeni studied NHL mortality rates in U.S. counties from 1950 to 1975 and

found the rates to be increasing over time.[6] Higher rates were seen in patients with a higher socioeconomic status. A similar increase in rates over time has been reported in Europe, Israel, and the United Kingdom.[7]

Risk Factors and Pathogenesis

There are a number of risk factors that may have pathogenic implications in the development of NHL. One of the most important is a viral etiology and a second is immunosuppression. Immunosuppression is of interest because both hereditary and acquired immunodeficiency states have been implicated.[8] In addition there may be an important interplay between a suspected viral etiology of NHL, chromosomal abnormalities, and immunosuppression. The hereditary immunodeficiency states associated with development of NHL include congenital X-linked immunodeficiency, severe combined immunodeficiency, common variable immunodeficiency, ataxia-telangiectasia, and Wiskott-Aldrich syndrome, among others.[9] It is of interest that some of these congenital immunodeficiency states are accompanied by chromosomal abnormalities, while six of the immunodeficiency states have an X-linked recessive inheritance.

Patients undergoing immunosuppression after transplantation have an increased incidence of NHL.[10] Renal transplant patients have a much higher incidence of a rare form of lymphoma, primary reticulum cell sarcoma of the central nervous system. Cardiac transplant patients who have preexisting idiopathic cardiomyopathy have an unusually high incidence of NHL.[11] Anderson reviewed their experience in cardiac transplantation patients who received immunosuppressive therapy.[11] NHL developed in six of 37 patients with transplant for primary idiopathic cardiomyopathy and in none of 54 patients with prior coronary artery disease. All patients developing lymphoma were in the group of 18 patients with idiopathic cardiomyopathy under age 40. Krikorian described six patients treated for Hodgkin's disease with chemotherapy and radiation who subsequently developed NHL.[12] From a cohort of 579 patients with Hodgkin's disease who were followed prospectively, the risk of developing NHL is estimated to be 4.4%. Finally, viral induced immunosuppression by the HIV virus has led to a virtual epidemic of NHL in AIDS patients.[13] It is projected that as many as one quarter of all cases of NHL in the United States may be linked to AIDS in coming years. Some of these cases have been seen in association with Epstein-Barr Virus (EBV) (see Burkitt's lymphoma below) and found to have translocations of the *c-myc* oncogene (see molecular epidemiology below).[4]

Molecular Epidemiology

There have been a number of familial cases of NHL.[15,16] The most significant chromosomal abnormality is the 14q chromosome which has been found in virtually every case of Burkitt's lymphoma as well as other NHL cases.[17] This is the location for T-cell receptor alpha chain gene locus. Burkitt's lymphoma often exhibits a translocation between chromosome 8 and 14, which results in the *c-myc* oncogene being placed into the normal location for the immunoglobulin heavy-chain locus. The translocation of the *c-myc* oncogene may lead to increased expression.

Several types of NHL have been found to have distinct epidemiology and etiology.

Burkitt's Lymphoma (BL)

Although at times described separately from NHL, Burkitt's lymphoma (BL) is often histologically distinct from NHL. Named for Denis Burkitt, who in 1958 described a syndrome of jaw tumors in African children that was subsequently found to be lymphoma,[18] BL is the most common childhood malignancy in certain regions of Africa, accounting for 50% to 70% of all childhood malignancies in these regions.[19] The average annual incidence of 2.8/100,000 has been reported in Tanzania[20] and in Nigeria in children between the ages five and nine in whom the incidence is as high as 21.8/100, 000.[21] The areas involved have been termed the "lymphoma belt" and encompass a broad band across equatorial Africa. However, all areas within this region are not equally affected . In areas of high altitude (over 5,000 feet) and little rainfall (20 inches or less) children are spared.[22] Low temperatures (<60° F) at high altitudes appear to be an important factor. Maps of affected areas within the lymphoma belt can be produced by excluding areas with temperatures below 60° F and rainfall less than 20 inches annually. Additionally these areas correspond with areas of increased incidence of yellow fever and high densities of mosquitoes. Other areas such as New Guinea and Papua (25% of childhood malignancies)[23] as well as San Paolo, Brazil (5% of childhood malignancies) also have high incidence rates.[24]

Based on these observations an infectious agent was considered as a possible vector or etiologic agent in BL. Antibodies to a herpes-like virus were found in virtually all sera from patients with Burkitt's lymphoma and most specimens contained herpes-like viral particles.[25] After the same herpes -like virus was found to be associated with and likely causal in the development of infectious mononucleosis,[26] it was named the Epstein-Barr virus (EBV) after the scientists who in 1964 first reported the successful establishment of a long-term cell culture viral line derived form Burkitt's tumor biopsy specimens.[27] EBV has also been associated as well with nasopharyngeal carcinoma,[28] and some cases of Hodgkin's disease[29] and leukemia.[30] EBV stimulates and "transforms" lymphocyte cell lines *in vitro* but has yet to fulfill all of Koch's postulates necessary to be called the etiologic agent of BL.

Adult T-Cell Leukemia-Lymphoma (ATLL)

A second type of NHL to be clearly associated with a viral pathogen is adult T-cell leukemia/lymphoma (ATLL). ATLL is a syndrome characterized by an aggressive clinical course with NHL and often leukemic involvement of the blood.[31] ATLL is associated with a retrovirus called HTLV-1 (human T-cell lymphotrophic virus -1) which was first reported in the late 1970s.[32] HTLV-1 is endemic in Japan[33] and the West Indies.[34] Over half of all cases of NHL in these areas are associated with the virus.[34] In both Jamaica and Japan the crude annual incidence is between 3 and 5 per 100,000. The association of HTLV-1 with ATLL has an odds ratio of 16.6[35] and the lifetime risk for ATLL in HTLV-1-positive population is 3% to 5%.[36]

AIDS Related Body Cavity Based Lymphoma

Mentioned above was the epidemic of NHL seen in association with the immunosuppression in AIDS patients.[13] One specific lymphoma seen in HIV-positive patients, called the AIDS-related body cavity based lymphoma, was recently found to have DNA sequences from a newly described virus, Kaposi-sarcoma -associated herpes virus (KSHS or HHV-8).[37] In this study 8 of 8 of this specific cavity based lymphoma contained the DNA sequence while 185 other types of NHL (36 of which were from AIDS patients) did not contain the DNA sequences. This newly described KSHS virus has been found in virtually all types of Kaposi sarcoma lesions.[38]

Gastric Lymphoma

Another type of NHL, primary NHL of the stomach was recently associated with a different infectious agent. Primary NHL of the stomach is an uncommon cancer accounting for only 10% of all lymphomas and 3% of gastric neoplasms.[39] This is approximately 7.1 cases of gastric NHL per million population annually.[40] Circumstantial evidence has suggested that a bacterium, *Helicobacter pylori (H. pylori)*, may increase the risk of gastric lymphoma, as over 60% of gastric NHL evolve from chronic gastritis, a lesion known to be caused by *H. pylori*.[42] In addition, treatment of *H. pylori* led to improvement in a subtype of gastric lymphoma.[43] A recent study demonstrated, that 85% of 33 patients with gastric lymphoma had *H. pylori* infection with a calculated odds ratio of 6.3.[44] This is the first cancer to be associated with a bacterial agent.

Conclusion

Clearly, many advances in the understanding of NHL have been made. Knowledge of the epidemiology and the pathogenesis of NHL may lead not only to a more rational classification scheme based on distinct clinicopathologic entities, but hopefully to more effective therapy and an improved outcome for afflicted patients.

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The Role of Birth Injury and the Consequences of Inadequately Treated Hypogonadism in Longstanding Panhypopituitarism

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ABSTRACT—We describe a middle-aged profoundly hypogonadal man with panhypopituitarism since infancy who was treated only with glucocorticoid and thyroid replacement. A magnetic resonance imaging study (MRI) revealed absence of pituitary stalk and ectopic neurohypophysis consistent with traumatic transection, probably resulting from a traumatic birth. The hormonal consequences of this stalk lesion were recognized but inadequately treated for 45 years resulting in avoidable endocrine and psychosocial defects. Androgen replacement was started at age 45 with good initial results. The unique hormonal replacement issues at this age are discussed.

Introduction

STRUCTURAL defects in the hypothalamo-hypophyseal axis have been shown to be the underlying etiology of some cases of panhypopituitarism, otherwise labelled as idiopathic.[1] Communications between the hypothalamus and both the anterior and posterior pituitary travel through the infundibular stalk, the former through a portal system and the latter through direct neuronal extension.[2] Pituitary stalk lesions include agenesis, traumatic transection, or infarction.[1,3] Magnetic resonance imaging (MRI) has played an important role in discerning stalk-related etiologies of panhypopituitarism.[4] We describe a middle-aged, profoundly hypogonadal man with panhypopituitarism since infancy who was treated only with glucocorticoid and thyroid replacement, and whose MRI revealed pituitary stalk absence consistent with traumatic transection. The role of birth trauma in panhypopituitarism will be discussed as well as the inadequately treated hormonal deficiencies and their serious but avoidable endocrine consequences over a 45-year lifetime.

Abbreviations Used in Text
GH = growth hormone
MRI = magnetic resonance imaging

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Case

A 45-year-old Hispanic male presented for the first time to our medical clinic requesting a prescription refill hydrocortisone 2.5mg p.o. b.i.d. and thyroxine 0.175mg per day. He offered no complaints. He had been born and raised in Puerto Rico. He reported a birth weight of nine pounds and a length of 21 inches. His birth record was unavailable. He stated he had seizures as a baby and had been started on the medications which he still was taking. He recalled having briefly received intramuscular androgen during his teens and again five times at about age 30. He said he was not treated thereafter because of painful gynecomastia. He recalled that he was told at age 35 that his bone age was that of a 17 year old. His mother, two brothers, and two sisters were alive and well. He moved to the United States with his family five weeks prior to this clinic visit. During all his years in Puerto Rico he saw his physician only intermittently.

On examination his blood pressure was 105/85 mmHg, pulse was 57 per minute with no orthostatic hypostension. His height was 165cm (crown-symphysis=74cm, symphysis-heel=94cm), his weight 59.5 kilos. His habitus

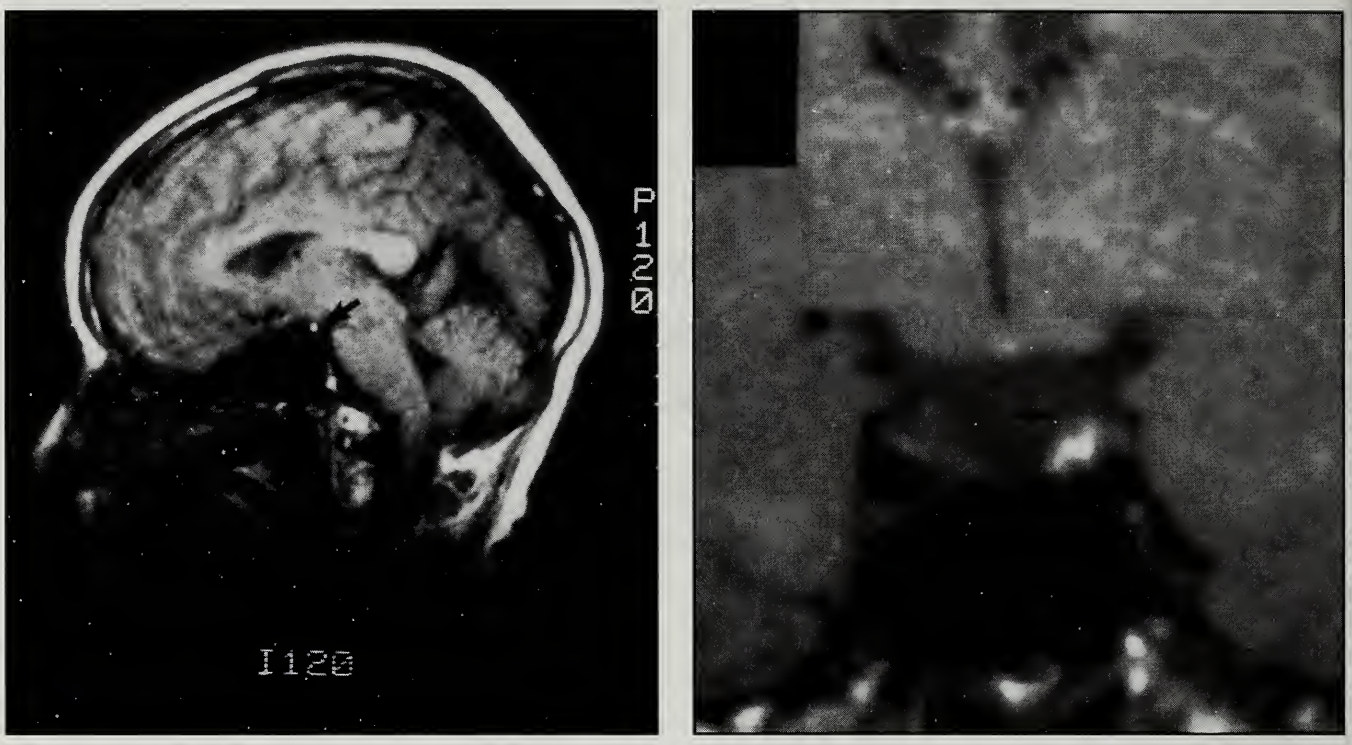

Figure 1.—Ectopic Neurohypophysis. Sagital (600/25) A and coronal (600/25) B. TI weighted images without contrast reveal the high intensity ectopic neurohyposhysis located at the median eminence (arrow in A), no infundibulum can be identified (arrow in B)

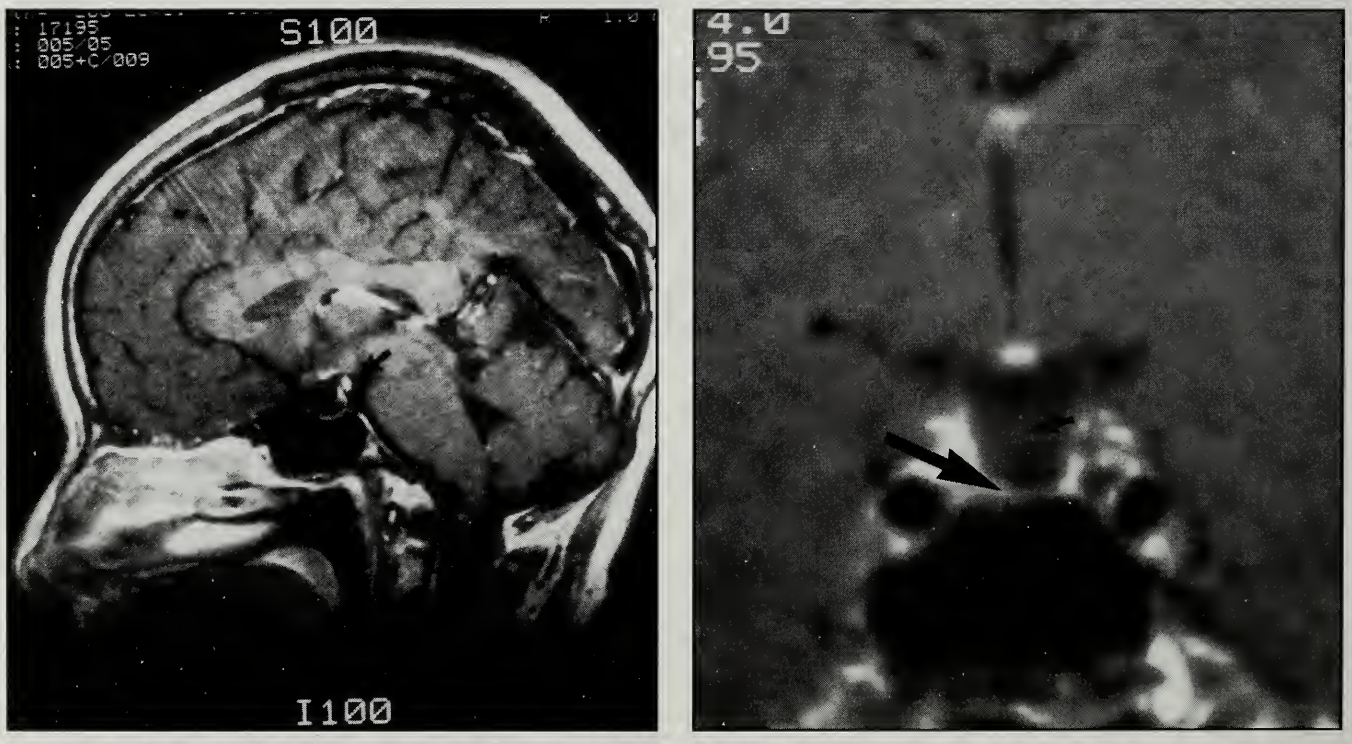

Figure 2.—Sagital (600/25) A and coronal (600/25) B contrast enhanced images again show high signal ectopic neurohypophysis (arrow in A) and lack of infundibulum (arrow in B) as well as a small anterior pituitary (large arrow in B).

was eunuchoid with pale, wrinkled facies; he had a high-pitched voice. He had no axillary, facial, pubic, or body hair. There were no visual field cuts and no anosmia. The thyroid was nonpalpable. Gynecomastia was present bilaterally. Cardiac, lung, and abdominal examination was unremarkable. Genitalia were infantile, penile length stretched was 8cm, and the testes were descended and firm measuring 0.5 cm each. Neurologically there were no unremarkable findings.

The following data were obtained:

FSH <1.0 mIU/mL
LH <1.0 mIU/mL
ACTH 10 pg/mL (7-10 AM= 9-52)
Somatomedin C (IGF-1) 3.00 ng/mL (N 71-290)
Growth hormone <1.5 ng/mL (N <5)
TSH 0.06 μIU/mL (0.32-5.0)
T4 10.2 μg/dL (4.5-12.0)
free T4 2.8ng/dL (0.8-2.7)
Testosterone <10 ng/dL (270-1070)
Na 137 meq/L
K 4.3 meq/L
Cl 99 meq/L
$C0_2$ 29 meq/L
BUN 9 mg/L
karyotype: 46xy.

Posterior pituitary evaluation was unremarkable. X-ray films of hands and wrists revealed closed epiphyses and a normal bone age. Dual energy x-ray absorptiometry displayed a lumbar spine bone mineral density of 0.804g/cm2 whereas the hip was 0.898g/cm2. This denotes significant spinal osteoporosis. The patient continued his medication and after counselling treatment was started using transdermal testosterone 4mg/24h. Two months later, his blood testosterone level two hours after patch application, was 504ng/dL. There was growth and darkening of scrotum,and his phallus was enlarged. Pubic hair appeared and became dense and circumscribed at the penile base. Growth hormone therapy was considered but the patient subsequently returned to Puerto Rico.

His MRI, (Figs. 1 and 2), shows the classic findings of absent infundibulum and ectopic neurohypophysis: high signal intensity ectopic posterior pituitary adjacent to the median eminence, absence of the high signal in the posterior sella, absence of the infundibulum, and a small anterior pituitary.[4,5]

Discussion

Panhypopituitarism in this case could have arisen from congenital hypopituitarism (hypoplasia), stalk transection, or infundibular agenesis. All are associated with traumatic breech delivery. Congenital hypopituitarism has an estimated incidence of one in 100,000 live births.[6,7] Panhypopituitarism is associated with an ectopic posterior pituitary. A recent report found a male-to-female ratio of 3:1 as well as a high incidence of breech delivery (28/29 patients) in these cases.[7,8] There is also a strong correlation between congenital hypopituitarism and midline developmental abnormalities such as optic nerve hypoplasia, cataract, absent corpus callosum, cleft palate, frontotemporal baldness, and urogenital as well as cardiac anomalies.[9] An embryologic event at a critical time of development, usually before the fifth week, may result in the absence of a cell line that usually guides the anterior pituitary toward the neurohypophysis.[10]

A traumatic event in the perinatal or postnatal period has to be considered as a likely etiology, especially when supported by the MRI findings. Breech presentation may be associated with a high degree of risk for traumatic stalk transection.[3,9] An easily deformable cranium leaves a point of sheer-stress at the diaphragma sellae where the pituitary stalk makes the transition from an intradural to an extradural structure. During a breech delivery this would be the likely site of stalk rupture. Depending on the severity of the trauma, reestablishment of the vasculature may lead to complete, partial, or lack of recovery of function.[9] Conversely, breech presentation per se may be the result of an embryonic pituitary/hypothalamic abnormality.[8] Studies on pituitary dwarfs with an ectopic neurohypophysis and patients with normally positioned posterior pituitaries showed that those with ectopic neurohypophysis had a greater incidence of traumatic delivery and perinatal asphyxia.[11] A study of pituitary dwarfs with multiple hormonal deficiencies (as with our patient) showed that they are more likely to have an ectopic neurohypophysis than those patients with an isolated growth hormone deficiency, (87% *vs* 10%).[4] Infundibular agenesis per se may cause anterior pituitary hypoplasia due to the absence of the hypothalamo-hypophyseal portal system. This also is associated with breech deliver.[1,4]

That the patient was not a dwarf may be explained by the history of testosterone injections during puberty. Testosterone replacement in the absence of growth hormone (GH) generally leads to accelerated growth but at the expense of premature closure of the epiphyses with a resulting final height less than that obtainable in the presence of GH. Our patient was smaller than his siblings.

The question of growth hormone replacement was raised in this case. There is evidence that GH deficiency leads to increased mortality from myocardial diastolic dysfunction.[12] Also, increased morbidity is reported due to muscle weakness, loss or bone density, increased body fat, decreased soft-tissue mass, and decreased renal function.[13-16] GH deficiency is also associated with increased risk of major depression and dysthymia.[16,17] During GH replacement therapy, increases in exercise tolerance, lean body mass, cardiac performance, and bone density have been reported, and a significant quality-of-life improvement has been recently shown.[18-20]

We were concerned in this patient about the physical and psychological implications of longstanding hypogonadism and its reversal at a relatively advanced age. The patient had been clearly raised as a male, but by age 45 he was still treated by the family as a child. The patient saw himself as a male and expressed concern about his lack of development. He understood the treatment process and was satisfied with the early results of replacement therapy.

We have not heard from him since he left the United States. The endocrine and psychosocial defects resulting from the inadequate treatment of his panhypopituitarism over 45 years could have been avoided had replacement therapy been begun in a timely way.

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Age-stratified Incidence of Unsuspected Mammary Carcinoma in Women with Fibroadenoma

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ABSTRACT—Fibroadenomas (FA) are benign neoplasms with a known albeit rare association with mammary carcinoma (MC). Incompletely explored, however, are 1) the statistical relationship of associated FA/MC with patient age and 2) the microscopic spatial relationship of associated FA/MC.

Pathology records of 1,715 patients with FA, excised over a nine-year period, were reviewed. In 59 patients concomitant diagnoses of FA and MC were rendered. In 40 of these patients MC was clinically unsuspected, signs and symptoms being attributable to the FA. Data were age stratified and slides were reviewed to identify the precise histologic association of FA and MC.

Women aged 50 years and older had a statistically significant increased association of FA and MC as compared to their younger counterparts (4.1% *vs* 1.5%; *P*=.003). MC complicating FA was *in situ* or invasive (82.5% *vs* 17.5%), of ductal, lobular, or combined type (40% *vs* 52.5% *vs* 7.5%), and half of the MC were restricted to the "normal" mammary tissue surrounding the FA.

Abbreviations Used in Text
FA = fibroadenomas
MC = mammary carcinoma
LCIS = lobular carcinoma *in situ*
DCIS = ductal carcinoma *in situ*

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Introduction

FIBROADENOMAS (FA) are the third most common lesion in the breast following fibrocystic changes and mammary carcinoma (MC).[1] They are most common among young women with a peak-age incidence in the third decade. They are thought to be much less prevalent in postmenopausal patients.[2] Fibroadenomas are classically considered benign lesions with a likelihood of postmenopausal involution.[2-5] Despite this, more than 200 cases of MC arising in association with a fibroadenoma are noted in the literature.[1] The low incidence of MC complicating FA limits the information available for proper management of patients with FA. We report 40 new cases of unsuspected MC arising in women with a clinical diagnosis of FA.

Material and Methods

Pathology reports of all patients diagnosed with FA at Hartford Hospital between June 1984 and July 1993 were reviewed. From these 1,715 cases, 59 with simultaneous diagnoses of FA and MC, were selected for further study. Of these, 19 cases were excluded because on more critical pathologic and/or clinical review, the patients' presenting signs (palpable mass and/or mammographic abnormality) were attributed to the MC while the FA was felt to be an incidental finding. The remaining 40 cases served as the basis for our analysis constituting a group of women presenting with FA, who were subsequently diagnosed as having an associated unsuspected MC. Histologic slides, stained with hematoxylin-eosin, were available for review in all the cases and included sections of the FA as well as the perilesional breast tissue. The carcinomatous elements were characterized as lobular *vs* ductal and *in situ vs* invasive by standard criteria.[6] If both ductal and lobular or

Table 1.—Location of mammary carcinoma associated with fibroadenoma.

Location	n.(%)	Pathology
Restricted to FA	10 (25%)	7 LCIS, 2 DCIS, 1 LCIS/IL
Restricted to peri lesional tissue	20 (50%)	8 LCIS, 7 DCIS, 1 LCIS/DCIS 1 LCIS/IL, 1 DCIS/ID, 1 ID, 1 IL
Both within and adjacent to FA	10 (25%)	3 LCIS, 3 DCIS, 2 LCIS/DCIS, 1 DCIS/ID, 1 ID

FA:fibroadenoma; LCIS:lobular carcinoma *in situ*; DCIS:ductal carcinoma *in situ*; IL:invasive lobular carcinoma; ID:invasive ductal carcinoma.

Table 2.—Age stratified incidence of unsuspected mammary carcinoma associated with fibroadenoma.

	Age (years)								
	<19	20-29	30-39	40-49	50-59	60-69	70-79	>80	Total
FA	87	263	412	421	216	205	89	22	1,715
MC	0	0	5[a]	13[b]	9[c]	10[d]	2[e]	1[f]	40
%	0	0	1.2	3.1	4.2	4.9	2.2	4.5	2.3

[a] 3 DCIS, 2 LCIS
[b] 6 LCIS, 4 DCIS, 1 DCIS/LCIS, 1 LCIS/IL, 1 DCIS/ID
[c] 5 LCIS, 2 DCIS, 1 DCIS/ ID, 1 ID
[d] 5 LCIS, 2 DCIS, 2 DCIS/LCIS, 1 ID
[e] 1 LCIS/IL, 1 IL
[f] 1 DCIS

FA:fibroadenoma; MC:mammary carcinoma; LCIS:lobular carcinoma in situ; DCIS:ductal carcinoma in situ; IL:invasive lobular carcinoma; ID: invasive ductal carcinoma.

in situ and invasive components were identified, both were recorded. The location of the MC relative to the FA was also recorded, noting if the MC was confined to the FA, identified only around the FA, or present both within and outside the FA. The incidence of unsuspected MC associated with FA was then stratified according to patient age.

Statistical analysis for the frequencies of MC associated with FA among the different age groups was performed using χ^2 with Yates' correction with significance set at P value of $< .05$.

Results

There were 1,715 women diagnosed with FA and having a mean age of 43 years. Fifty-nine patients had simultaneous diagnoses of MC and FA. Exclusion criteria were applied (see methods) leaving 40 patients (2.3% of the total) with simultaneous diagnoses of FA and unsuspected MC. The mean age of this group was 53 years (range 30 to 80 years). Lobular carcinoma *in situ* (LCIS) constituted the most frequent neoplastic lesion occurring in 23/40 patients (57.5%). LCIS occurred in isolation in 18/40 patients (45%) and as a neoplastic component of a combined lesion in an additional five patients. Ductal carcinoma *in situ* (DCIS) constituted the next most frequently identified neoplastic lesion occurring in 17/40 patients (42.5%). DCIS occurred in isolation in 12/40 (30%) of the cases and as a neoplastic component of a combined lesion in an additional five patients. Invasive MC was present in 7/40 (17.5%) of the cases. Fig. 1 displays the complete histologic breakdown.

The location of the unsuspected MC was exclusively within the FA in 10/40 (25%) of the cases. MC was confined to the perilesional breast tissue in 20/40 (50%) of the cases. In 10/40 (25%) of the cases, MC developed both within the FA and in the adjacent breast parenchyma. Of MC confined to FA, 90% were *in situ* lesions (LCIS and/or DCIS) and 70% were pure LCIS. Of the MC that were restricted to the perilesional breast tissue, a wider spectrum of histologic types were noted, with occurrence of invasive MC in 20% and pure LCIS accounting for only 40% of the cases. Among MC occurring both within and adjacent to FA, only 30% were pure LCIS. Table 1 shows details the histologic combinations.

When the data were stratified by age, the vast majority (87.5%) of unsuspected MC were seen to occur in women after the fourth decade of life (see Table 2). The diagnosis of FA was made in all age groups being most frequent in the fourth and fifth decades. The average ages of women diagnosed with LCIS and DCIS were 52 and 49 years, respectively. The average ages of women with invasive lobular and ductal MC were 66 and 55 years, respectively. Invasive MC was not identified until the fourth decade. Of women under 50 years of age the incidence of MC com-

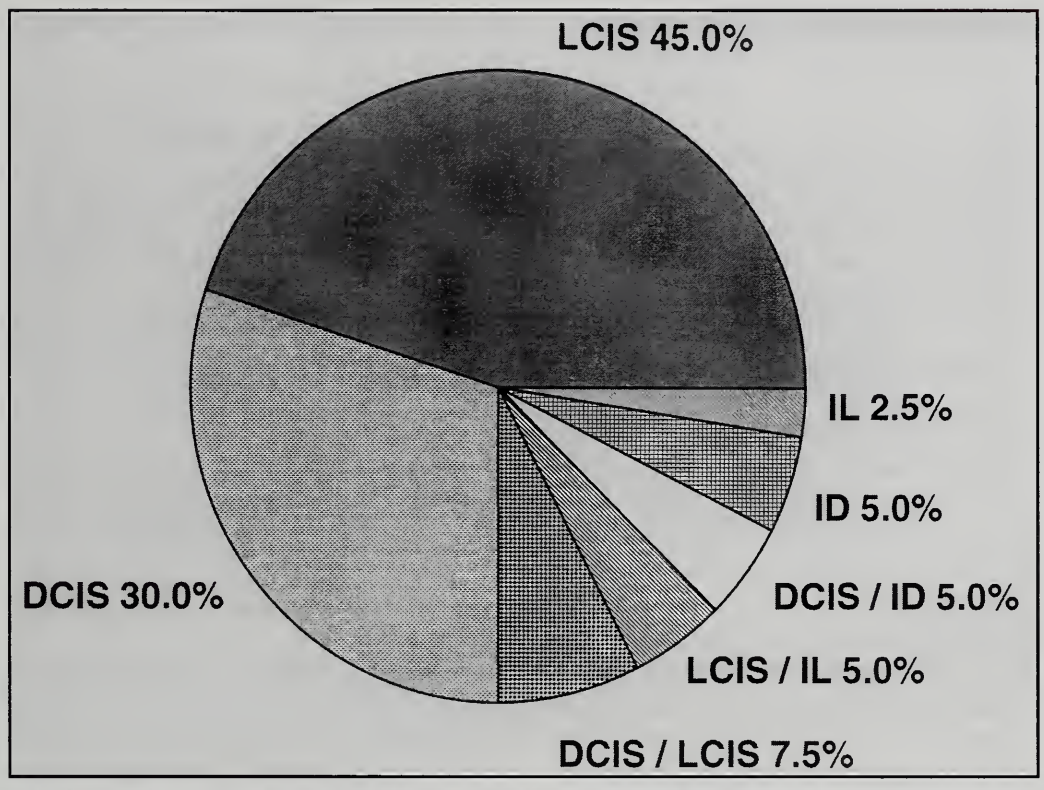

Figure 1.—Histopathology of mammary carcinoma associated with fibroadenoma. LCIS:lobular carcinoma in situ; DCIS:ductal carcinoma in situ; IL:invasive lobular carcinoma; ID:invasive ductal carcinoma.

plicating a diagnosis of FA was only 1.5% (18/1183). Women aged 50 years or older, however, had MC complicating a FA in 4.1% (22/532) of the cases (P=.003). Women older than 50 years had a higher incidence of MC restricted to the tissue adjacent to the FA as compared to their younger counterparts, but the difference was not statistically significant (P=0.3).

Discussion

FA is typically considered a tumor of young individuals. In this regard, it is notable that in our series the average age of women with FA was 43 years, with almost a third of the FA diagnosed after the age of 50. We speculate that this discrepancy may be attributed to more intense screening and aggressive surgical intervention in older women in recent years.

FA is rarely associated with MC.[7] McDivitt el al in 1967 reported a series of 26 cases.[8] Goldman and Friedman in 1968 reported seven cases occurring over a 15- year period.[9] Fondo et al in 1979 added 14 cases identified over a 10-year period.[10] Ozzello and Gump in 1985 presented another 34 cases, 22 of whom were seen in consultation, over a period of 33 years.[7] Diaz et al in 1991 added 105 cases seen in consultation over a 19-year period.[11] McDivitt et al in 1992 found that FA was an independent task factor for MC.[12] Our series consists of 40 cases of unsuspected MC arising in FA diagnosed over a nine-year period, for an overall incidence of 2.3%. This relatively high incidence compared to the previous reports might also be a consequence of the higher mean age of the women diagnosed with FA in our study group.

In the literature, the average age of women with MC arising in a FA is 43 years, or 20 years older than the peak incidence of FA in the general population.[1-2,7,13-14] The average age of women with invasive MC is 10 years older than women with *in situ* disease.[7] In our study, the mean age of women with MC arising in a FA was 53 years. Ductal carcinoma appeared slightly earlier than lobular carcinoma; noninvasive MC appeared six to 14 years before invasive malignancy. The incidence of MC for women under 50 years of age in our series was low (1.5%) and was not seen in women in our series under 30 years of age. Conversely, the incidence of unsuspected MCs associated with FA in women over 50 years was over 4% overall, with women in their seventh decade having the highest incidence (almost 5%). That nearly 1 in 20 women may harbor MC in a clinically "benign" FA, provides a reason for considering biopsy of all such lesions in women over 50 years of age.

The most common histologic type described is LCIS,[1-2,7,9-11,13,15] which in our series was noted in pure form or as a component of the malignancy in 57.5% of the cases. DCIS is the next most common type, usually growing in either a comedo or cribriform pattern.[2] The higher occur-

rence of lobular neoplasia in FA compared with the lower overall incidence of lobular *vs* ductal carcinoma has been attributed to the terminal duct/lobular unit origin of FA.[2] Invasive MC complicating FA is less frequent, representing 5% of the malignancy in Diaz series,[11] with both lobular and ductal types documented. In our series, invasive MC was present in 17.5% of the cases and a slight preponderance of invasive ductal *vs* invasive lobular carcinoma was noted, which is consistent with the literature.[7] The higher incidence of invasive malignancy in our series may also be attributable to the older mean age of our study group. Some reports show MC to be confined to FA in the majority of the cases,[15] while on the other hand, involvement of the perilesional tissue is reported in 21% of the cases of carcinoma *in situ*[11] and in 42% of all cancer cases.[13] It is of note that in our series 50% of the MC were restricted to the tissue surrounding the FA. For these women, the FA essentially served as a vehicle for "early" detection of MC. Whether patients presenting with FA and occult MC have a better prognosis than those presenting with signs and symptoms relating to MC remains to be established. The high incidence of MC restricted to the mammary tissue surrounding a FA emphasizes the need for adequate breast tissue sampling by surgeons and pathologists. During surgical excision via needle localization, removal of some perilesional breast tissue is usual and this tissue should always be sampled by histologic sections. Furthermore, given the advent of stereotactic core biopsies for the investigations of mammographic mass lesions, it is particularly important for radiologists to direct their biopsy guns both at the lesion and at its periphery in order to sample potentially occult MC associated with FA.

Note: We have recently seen a case of ductal carcinoma *in situ* associated with a FA in a 25-year-old woman whose mother had previously been diagnosed with MC. This suggests that all age groups can develop MC complicating a FA, although the incidence of this association is probably very small in women under 30, especially those lacking a positive family history.

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A Survey of Sunbathing Practices on Three Connecticut State Beaches

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ABSTRACT—In order to analyze sunbathing practices, a survey was conducted during the summer of 1995 on three Connecticut state beaches, with 1,003 interviews completed. The majority (65.8%) of respondents were women. Almost 70% of respondents were visiting the beach to get or maintain a tan. While the intended beach stay averaged four hours, only 55.7% of respondents were using sunscreen, 6.9% were sitting under shade, 12.7% were wearing hats, and 17.1% were wearing clothes other than a bathing suit. More than half (55%) of the sunscreen used had a sun protection factor of less than 15. Children were provided with greater protection than adults. The survey indicates the need for greater educational efforts to motivate protective behavior. Primary-care physicians could have an important role in these efforts.

FOR 1996, it is estimated that the new cases of skin cancer in the United States will include 38,300 cases of melanoma and >800,000 cases of nonmelanoma skin cancers.[1] The latter estimate is less reliable than that for melanoma skin cancers, because nonmelanoma cases are not reported to cancer registries.

Basal cell skin cancer, the most common form of nonmelanoma skin cancer, is slow growing and very rarely metastasizes. Squamous cell skin cancer, the next most frequent, may metastasize to regional lymph nodes, but it is still not as life-threatening as melanoma cell skin cancer. In the United States, the 1996 estimate of 2,100 deaths from these two forms of nonmelanoma skin cancers is far less than the estimated 7,300 deaths from melanoma.[1] In Connecticut, some 1,522 cases of melanoma skin cancer were diagnosed in 1989-1991,[2] and 560 new cases are projected for 1996.[1]

Melanoma skin cancer is increasing faster than any other cancer. The incidence has been doubling during each decade since 1950, and it is currently the most frequent of all cancers in women ages 25 to 29, and the second most frequent cancer (after breast cancer) in women 30 to 34 .[3] The lifetime risk of melanoma for Caucasians in the U.S. is estimated to be about one in 75, with males having a slightly higher risk (1.55%) than females (1.20%).[4]

Exposure to the ultraviolet (UV) radiation in sunlight is believed to be the major risk factor for all types of skin cancer,[5,6] based on animal experiments and epidemiological studies.[7,8,9,10] Although the association between melanomas and sunlight is somewhat controversial,[9,10,11] melanoma may be related to intense, intermittent exposure, and to incidents of blistering sunburn during childhood and adolescence,[12,13] as well as to more chronic exposure. Increasing UV exposure due to depletion of the ozone layer may also affect the trends for skin cancer.[12,14]

The incidence of melanoma in Connecticut was found to be higher in certain shoreline towns with beaches.[2] During the summer of 1995, an anonymous survey was conducted of sunbathing practices on the three Connecticut State beaches on Long Island Sound which permit swimming: Hammonasset, Rocky Neck, and Sherwood Island. Hammonasset is by far the largest, but has less available shade near the beach area than the other two beaches.

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Table 1.—Demographics		
	Percent	**n**
Gender		
Men	34.2%	343
Women	65.8%	660
Age		
12-17	7.7%	77
18-24	15.5%	155
25-34	31.1%	312
35-44	26.5%	266
45-54	12.7%	127
55+	6.6%	66
Education		
< High School	2.7%	25
High School	26.3%	243
Some College	29.0%	268
College Graduate	24.8%	229
Postgraduate Studies	17.3%	160
Park		
Hammonasset	49.7%	498
Rocky Neck	25.9%	260
Sherwood Island	24.4%	245

Methods

All interviews were conducted by a male student in the Master of Public Health Program at the University of Connecticut School of Medicine, between 1 July 1995 and 2 September 1995. A total of 1,003 interviews were completed, half at Hammonasset (Table 1). There were only 51 nonparticipants (5%), of whom approximately half were not interviewed because of language barriers. The survey was conducted between the hours of 9:30 A.M. and 3:30 P.M., when most of the UV rays associated with skin cancer hit the earth's surface.[15] Persons interviewed were sitting or lying on the sandy portion of the beach, randomly selected (every fifth person), and at least 12 years of age.

Estimates as to how long a person had been on the beach and how long she intended to stay, were rounded off to the nearest half hour. The interviewer attempted to skip over those who appeared to have just arrived on the beach. For persons who indicated sunscreen use, the interviewer asked to see the sunscreen to determine whether the respondent correctly recalled the sun protection factor (SPF), and whether the sunscreen was waterproof and/or combined with tanning oil. If two or more different sunscreens were indicated, such as a higher SPF for the facial area than for the body, the SPF for the sunscreen used over the largest skin surface area was recorded. Sunscreen use on only a small part of the skin surface, such as the face, was recorded as "no sunscreen" use, because melanoma most frequently occurs on the trunk and legs.[12,15]

For the 22 respondents who refused to state their age, the interviewer's estimate was based on judgment and such responses as "in my 30s" or "older than 55." Other refusals were rare, with four for town of residence, two for state of residence, and one for the number of times sunbathing per average summer month.

In recording the use of shade, the 45 persons who had an umbrella nearby, but were not found sitting under the shade, were recorded as "no shade." The interviewer could not verify whether children had actually been provided with the three protections listed (shade, sunscreen,

Table 2.—Results by Gender Percent with Characteristic			
Characteristic	Men	Women	All
Trying to get and/or maintain tan	59.5%	74.9%	69.6%
Applied sunscreen	47.8%	59.8%	55.7%
Of those: used SPF <6	29.4%	37.8%	35.3%
Of those: used SPF >14	50.9%	42.6%	45.0%
Wearing sunglasses	47.8%	40.9%	43.3%
Under shade	8.7%	5.9%	6.9%
Wearing clothing beyond bathing suit	14.0%	18.8%	17.1%
Say their skin burns easily	8.7%	8.3%	8.5%
Say their skin burns sometimes, does tan	45.5%	50.9%	49.1%
Say their skin rarely burns, tans easily	36.7%	35.3%	35.8%
Say their skin never burns	9.0%	5.5%	6.7%
Sunbathes <5 days per summer month	62.3%	58.0%	59.5%
Sunbathes >7 days per summer month	24.0%	28.2%	26.7%
Have been checked for skin cancer	22.5%	28.7%	26.5%

Table 3.—Sunscreen Use and Length of Beach Stay		
Sunscreen Use Characteristics	**Number of Respondents**	**Length of Intended Beach Stay**
Those not wearing sunscreen	444	3.97 hours
Those wearing sunscreen	559	3.89 hours
Of those: used SPF <15	309	3.92 hours
Of those: used SPF >14	250	3.85 hours

and clothing). Adult custodian responses that shade or clothing had been provided for their children were accepted, even if the children were not found under the shade, or wearing clothing over their swimsuits at the time of the interview, except for instances where no available shade was visible. If the child had not yet been provided with sunscreen at the time of the interview, the record showed as "no sunscreen."

Results

Sociodemographics.—The average age of the persons surveyed was 34.3 years (median age 33). Almost two-thirds (65.8%) of the respondents were women (Table 1). The greater frequency of women on the beach has also been noted in a North Carolina survey that found that women were more likely to engage in sunbathing.[16] The median educational level of those who were at least 18 years of age was two years of college, with more than 97% of those surveyed having at least a high school diploma. The majority of persons self-assessed their skin sensitivity in the two most sensitive categories: "burns easily and peels" (8.5%) and "burns sometimes, does tan" (49.1%). (Table 2).

Reason for visit.—Almost 70% of those surveyed were visiting the beach to get or maintain a tan (Table 2). Individuals trying to get or maintain a tan, found most prominently among 18 to 24 year olds, were more likely than others to use sunscreen, but also tended to use sunscreen with a lower SPF. At an average of 1.5 hours after beach arrival, only about one-third of the respondents using sunscreen had been in the water. Although a higher percentage of females than males had been checked for skin cancer, females were still more likely to be trying to get or maintain a tan. Almost 60% of all respondents reportedly sunbathed four days or less per month, but 26.7% sunbathed eight days or more per month (Table 2).

Sunscreens.—The average intended beach stay was long (ie, approximately four hours), but only 55.7% of persons were using sunscreen at the time of the interview (1.5 hours, on average after beach arrival) (Table 2). There was no statistically significant difference in the intended beach stay between those persons who used sunscreen and those person who did not use sunscreen: nor between those who used sunscreen with an SPF <15 and those who used sunscreen with an SPF >14 (Table 3). Persons who had been checked for skin cancer were more likely to use sunscreen than those who had not been checked. More than a third (35.3%) of sunscreen users were using sunscreen with a SPF of 5 or less, with 45% using sunscreen with a SPF of 15 or greater (Table 2). Sunscreen with an SPF of 15 is generally considered to be the minimum for adequate protection from the sun.

Female respondents were more likely to use sunscreen and to know the SPF value of their sunscreen. Sunscreen use was not related to the extent that a person's body was covered with clothing, but it was directly related to self-assessed "burnability" of skin—the more sensitive the skin, the greater was the chance that suncreen was used, as well as sunscreen with a higher SPF value. Sunscreen use was also more prevalent on those days when UV radiation was at its strongest.

Sun Protection.—A minority of respondents were sitting under shade (6.9%), wearing clothing beyond a bathing suit (17.1%), wearing hats (12.7%) or wearing sunglasses (43.3%), with men more likely than women to be wearing sunglasses or hats (Table 2). While children were generally provided with a greater level of sun protection than adults, 11.6% had not been provided with any protection, and only 11.6% were provided with all three levels of protection (sunscreen, clothing, and shade). Children were more likely to be protected from sun exposure if their custodian was using sunscreen.

Discussion

Limitations of Survey.—Survey limitations included failure to ask when sunscreen was applied, or to what portions of the body sunscreen had been applied. The effectiveness or timeliness of the sunscreen application, therefore, could not be determined. Many of the sunscreens with a low SPF were tanning oils, and some respondents were unaware that the tanning oil had any-SPF, suggesting that any protection from the sun was unintended.

Respondents had difficulty estimating the number of times per summer month that they lie out in the sun at a beach or elsewhere. Some persons probably gave estimates that applied to weeks or entire summers, or were limited to beach sunbathing. The survey also did not include number of visits to tanning booths, a subject brought up by several persons.

While indicating that adults are providing greater protection against sun overexposure to children than to themselves, the survey results may have overestimated the protection provided to children. Despite anonymity, custodians may be sensitive about appearing irresponsible towards their children.

Prospects for Intervention.—It is now at least two decades since a strong association has been established between overexposure to the sun and skin cancer. This knowledge has yet to result in significant behavioral changes. A 1992 National Health Interview Survey indicated that only 31% of U.S. adults limit their exposure to the sun, only 28% routinely use sunscreen, and 28% wear protective clothing.[17] This is a far cry from the national health objective of Healthy People 2000 to increase to at least 60% the proportion of persons who limit their sun exposure, use sunscreens and protective clothing, and avoid artificial sources of UV light, such as tanning beds.[17] While concern has been expressed that sunscreen use may promote greater exposure to the sun the survey results did not support this concern (Table 3).

Beaches appear to be ideal places in which to initiate intervention programs. The survey suggests that sunbathing is the primary reason people attend beaches. While 70% of those surveyed were visiting the beach to get or maintain a tan, only one-third of those using sunscreen had been in the water at the time of the interviews.

In Rhode Island, a Sun Smart Project demonstrates that interventions to reach individuals at high risk for skin cancer at beaches are feasible. The project was designed to deliver skin cancer prevention and health promotion efforts directly to sunbathers at Rhode Island beaches.[18] The interventions included free sunscreen samples, sun sensitivity assessment and feedback, video information, educational pamphlets, and use of technology highlighting individual skin vulnerability. There was a high participation rate and interest among the beach population.

In Connecticut, a survey is being prepared which will incorporate a small intervention consisting of educational posters. Intervention directed to adults should take into consideration that many adults already know that there is a risk of skin cancer from sunbathing. Such awareness would account for the fact that in the Connecticut survey, custodians reported providing children with greater protection than to themselves. An intervention for adults should counter the reason why people get tans (ie, to look attractive), by emphasizing the premature aging of the skin from overexposure to the sun.

Physicians and public health officials should take a more active role in the prevention of skin cancer. Primary prevention, including avoiding excess sun exposure, would reduce the risk of most skin cancers.

Primary-care physicians should ask questions about, and/or warn against overexposure to the sun during general physical examinations. They should also perform a complete body check for suspicious moles and emphasize the importance of avoiding excessive UV light exposure. When malignant melanoma is diagnosed in a localized stage, the survival rate is 93.8%.[4] The survival rate falls to 59.8% when it has reached a regional stage, and 15.9% at a distant stage. Few malignancies have as large a payback with early detection as melanoma of the skin.

Acknowledgments

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Abstracts of Papers: Danbury Hospital 11th Annual Joseph L. Belsky, M.D., Research Day 8 May 1996

These abstracts were selected from 35 submitted for posters and oral presentations, 12 were selected for publication . On this 11th anniversary it is notable that participation by community physicians has tripled and that reports of outcomes investigations have increased.

Delayed Immunization and Primary-care Services Utilization

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Initiatives on improving immunization completion rates for two-year-olds were associated with an increase in the national average from less than 60% to 75% in recent years. Although the completion rate for patients in the greater Danbury area is significantly better at 86%, further improvement is needed to achieve the goal of the Healthy People 2000 Initiative to more than 90% by the end of this year.

We conducted a study to test the hypothesis that childhood immunization, as a voluntary act advocated by parents and recommended by physicians, is directly associated with primary-care services utilization. Medical records of children born after 1992 and attending the Pediatric Health Center at Danbury Hospital were selected at random for review. The recommended age for a child to receive his or her first set of immunizations, including diphtheria-pertussis-tetanus, polio, and *H. influenzae,* is at two months. The control group of 18 children had their first set of immunizations before three months of age. The experimental group of 18 children had their first set of immunizations after three months of age. The primary-care services utilization by these children during their first year of life were reviewed. For control and experimental groups, the mean numbers of visits per child to the ambulatory clinic were 21.3 (1 SD = 10.8) and 16.4 (1 SD = 7.0) and to the emergency room were 6.1 (1 SD = 5.4) and 6.7 (1 SD = 6.0) respectively. For each child the relative use of acute emergency care *vs* prevention care was calculated as a percentage of the emergency room visits over the clinic visits. This primary-care service utilization ratio reflects the appropriateness of accessing clinical services. A planned and preferred utilization of clinical resources is expected to have a minimum number of emergency room visits and a larger number of prevention clinical visits. Data from this study showed the mean utilization ratios were 19.1% (1 SD = 11.9%) for the controls and 26.5% (1 SD = 12.7%) for the experimentals. Statistical analysis of these clinic utilization ratios between the control group *vs* the experimental group shows the Welch's approximate $t = 1.79$ and the one-tailed $P = .041$. This significant difference between the two groups suggests that children who are delayed for their immunization also use the emergency clinical services more often. Furthermore, delay in immunization also places these children at risk for the development of vaccine preventable infections.

The result of our study supports the hypothesis that immunization practice is directly associated with the utilization of primary-care clinical services. Any program designed to improve the immunization completion rate

may also help to reduce the over utilization of acute-care emergency services. Health-care providers may consider and design any initiative dealing with immunization practice and primary-care services utilization as integral components of the same program.

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A Five-year Analysis of 541 Endoscopic Carpal Tunnel Releases

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Carpal tunnel syndrome (CTS) is the most commonly seen nerve compression syndrome. When conservative treatment measures fail, surgery usually consists of a relatively standard and well-established method of open transverse carpal ligament transection. Recently, with emphasis on minimally invasive surgery, endoscopic carpal tunnel release is gained through a 1 cm incision in the wrist, and early results show less postoperative morbidity.

A retrospective analysis of patients undergoing endoscopic carpal tunnel release in a private practice setting over the past five years was performed encompassing 541 procedures in 392 patients. Sensation normalized in 99% of patients while grip strength was 109% of preoperative values. Return to work averaged 17.5 days. Patient satisfaction, resolution of symptoms, and improvement in function were excellent and consistent with contemporary reports.

The complication rate was 3.7% most of which were due to pisotriquetral arthrosis. There were two digital neurapraxias which resolved spontaneously but no other nerve, vascular, or tendon injuries. Follow-up was at least three months.

Endoscopic carpal tunnel release, in the short term, has proven to be a safe and effective tool for the operative management of carpal tunnel syndrome.

Usefulness of Tomographic Scanning (SPECT) for the Evaluation of Low Back Pain in a Young Population

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Low back pain is a common, often benign, and self-limiting disorder encountered in medical practice. Rarely, there may be an underlying serious cause such as herniated disk, neoplasia, or fracture, particularly in the younger and athletic patients where fracture of the pars interarticularis (spondylolysis) may be the underlying etiology. Bone scanning is routinely performed in the assessment of patients with low back pain as routine radiographs of the spine are often normal, or a pars defect of the lamina may be seen on the radiographs, computed tomographic scan, or magnetic resonance image. Since such defects may represent old fractures, it is not certain that they are the cause of underlying pain. Planar bone scanning has serious limitations in the diagnosis of subtle abnormalities of the lumbosacral spine because of the structures involved. Single photon emission computerized tomography (SPECT) has been reported to be more sensitive for delineating the precise abnormalities. We conducted a prospective study to compare the usefulness of SPECT *vs* planar imaging in patients with low back pain.

Thirty-six patients complaining of recurrent low back pain were included in the study. There were 20 males and 16 females with a mean age of 34 years. All had routine three-phase bone scanning of the lumbosacral spine fol-

lowed by tomographic imaging and review of multiple transaxial, sagittal, and coronal projections. Five of 36 patients showed abnormalities of the lumbosacral spine on planar imaging *vs* 16 of 36 on SPECT imaging. Nine of 16 had spondylolysis of the lumbar vertebrae; two had facet arthropathy, three had fractures, and two were found to have postoperative (fusion) changes. None of the nine patients with spondylolysis had lesions that were unequivocally evident on planar imaging; whereas, arthritis and fractures could be identified. The sensitivity of SPECT imaging was 100% and planar imaging sensitivity was only 31%. All these patients also had MRI examinations of the lumbosacral spine which correctly localized a defect in eight of nine cases (sensitivity = 94%). The sensitivity of radiographs was much lower.

In summary, SPECT imaging provides a simple, safe, and sensitive assessment for patients with low back pain, particularly athletic young people who may be at risk for developing fractures of the pars interarticularis (spondylolysis). The specificity of the lesions seen, however, depends upon correlation with other available modalities and clinical findings.

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Efficacy of Provider Health Assessments to Substantiate the Usefulness of Back Belts

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Despite the paucity of scientific research to validate effectiveness, employers in record numbers are making investments in mechanical back support devices (back belts). Low back problems account for more than 30% of workers' compensation claims at a cost exceeding $60 billion per year. A recent study of 301 employers reported that 202 provided employees with back belts as part of a safety program to reduce back injuries. Of 86 employers who recorded results, 75.6% reported a reduction in back injury claims. At the same time the National Institute of Occupational Safety and Health (NIOSH) prepared a report which did "not recommend the use of back belts to prevent injuries among uninjured workers...."

Recently, the National Safety Council (NSC) suggested "that back supports may have some value as a supplement to a comprehensive ergonomics program." NIOSH Division Director, Larry Fine, stated that "voluntary use (of back belts) is certainly acceptable." This statement implies a modification of NIOSH's original position.

Manufacturers and vendors (providers) of back belts have a vested interest in employee health if only to increase product sales. Properly focused employee health and medical assessments conducted for the customer by the provider could provide data to substantiate safe and effective back belt use.

Over 15 million back belts were sold between 1991 and 1993. If providers had conducted employee health and medical assessments for customers, data would have been available for the evaluation of back belt suitability, which is only now being done by NIOSH.

Responding to this deficiency we initiated a preliminary survey of providers addressing issues including training, work assessment, and health concerns. Our findings were: training is provided about 50% of the time, work assessments about 20%, and health concerns 5%.

We conclude that provider support, particularly in the areas of work and health assessments, has not been done to the extent necessary to substantiate with confidence the claims for effectiveness of back belts.

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A Prospective Study of Serum Parathyroid Hormone-related Peptide in Lung Cancer

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Parathyroid hormone-related peptide (PTHrP) is expressed in malignancy-associated hypercalcemia (MAH). In previous series lung cancer is included among the tumors expressing PTHrP in MAH, but none to date have examined patients with all histologic types and stages of lung cancer.

We studied the blood of 65 untreated lung cancer patients using an immunoradiometric assay for the N-terminal region of PTHrP and a radioimmunoassay for the C-terminal region of PTHrP.

Results.—We found that, of 65 patients studied, 35 (54%) expressed PTHrP in one or both assays. Eight (12%) were hypercalcemic and seven of these (87.5%) were positive for PTHrP. Twenty-eight of 57 (49%) normocalcemic patients were positive for PTHrP. Four patients who were positive by the C-terminal assay had renal failure, a feature associated with false positives in earlier studies; two of these four were also positive by the N-terminal assay which is not affected by renal failure. Of note, although the majority (62%) of hypercalcemic patients were of squamous cell type, in normocalcemic subjects all histologic subtypes expressed PTHrP with equal propensity.

There seemed to be no clear association between stage of tumor and PTHrP positivity. Likewise, no relationship could be shown between stage of histologic subclass of tumor and mean values of PTHrP measured by either assay.

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Alendronate Modulates the Bone Metabolism of Patients with Primary Hyperparathyroidism

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Although parathyroidectomy is the definitive therapy in primary hyperparathyroidism, some patients choose not to undergo surgery for a variety of reasons. These patients usually develop a progressive osteopenia because of the persistent bone resorption that is stimulated by the elevated parathyroid hormone. Alendronate, a diphosphonate agent, inhibits bone resorption by its chemisorption to the hydroxyapatite crystals, thereby preventing the osteoclasts from dissolving the mineralized collagen fibrillar substructure. This antiresorptive action, by shifting the bone renovation cycle in favor of the bone formation phase, may ameliorate the osteopenia associated with hyperparathyrinernia. Four women patients, whose ages ranged from 68 to 77 years, were diagnosed to have primary hyperparathyroidism with moderate to severe osteopenia (based on vertebral spine x-ray films or dual energy radiography-generated bone densities that differed from normal by 2-3.5 standard deviations). After declining their physician's recommendation to undergo an elective parathyroidectomy, the four patients agreed to take alendronate, 10 mg orally once daily, to reverse or decelerate their bone mineral loss. Blood and urine specimens for the measurement of their bone metabolism indices were obtained prior to starting alendronate therapy; another set of specimens was obtained 45 to 60 days later. The following data were obtained:

Bone metabolism index (reference range)	Patients (before alendronate/with alendronate)			
	A	B	C	D
Serum total calcium (<10.3 mg/dL)	10.3/9.6	11.8/11.1	10.4/9.6	10.7/9.8
Serum ionized calcium (<1.33 mM)	1.41/1.33	1.83/1.4	1.36/1.30	1.37/1.30
Serum parathyroid hormone (<57 pg/mL)	59/66	175/210	77/95	73/94
Urine calcium (<200 mg/g Cr)	190/95	250/160	195/72	390/271
Serum alkaline phosphatase (<126 U/L)	94/81	87/102	50/85	157/160
Serum osteocalcin (<16.9 ng/mL)	5.2/13.3	–/–	8.1/18.0	10.2/16.0
Urine N-terminal telopeptide (17-120 nmol BCE/mmol Cr)	–/40	–/40	–/70	–/10

With alendronate therapy, all patients showed a decline in their serum total and ionized calcium levels. Three out of four became eucalcemic. This decline in serum calcium was associated with a further elevation in their PTH level, and a decrease in their hypercalciuria. Serum alkaline phosphatase level, a relatively insensitive index of bone formation, rose three out of four patients; however, both pretherapy and during-therapy levels remained normal in three patients. The level of serum osteocalcin, a peptide marker of osteoblastic activity, rose in three patients. Finally, the urine collagen N-terminal telopeptide level, a marker of bone resorption, was either normal or suppressed in the treated patients.

In summary, alendronate therapy of primary hyperparathyroidism for 45 to 60 days apparently inhibited hypercalciuria, bone resorption, and hypercalcemia. Furthermore, it stimulated PTH secretion and osteoblastic activity. Whether these short-term biochemical changes persist and lead to an increase in the bone mineral density of hyperparathyroid patients treated with alendronate will need to be further investigated.

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Correlation of Atypical Squamous Cells of Undetermined Significance (ASCUS) in Papanicolaou Smears with Tissue Diagnosis

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"Atypical Squamous Cells of Undetermined Significance," or ASCUS, is a category under the Bethesda System for Reporting Cervical/Vaginal Cytologic Diagnoses. It includes all cellular abnormalities that are more severe than those attributable to reactive changes but at the same time cannot be classified under the category of squamous intraepithelial lesion (SIL). ASCUS implies that the observer cannot determine whether the lesion represents a benign change or a premalignant or malignant lesion (undetermined significance), and therefore is a diagnosis of exclusion.

For the period of 3 March to 28 December 1995, 23,000 gynecologic cytology cases were seen in the Department of Pathology and Laboratory Medicine at the Danbury Hospital. Of these, 393 patients (1.7%) were diagnosed as ASCUS, 119 of which had subsequent endocervical curettings and biopsies, including cervical biopsy, loop electrocautery excision procedure, and cone biopsy. Chronic cervicitis was seen in 38.7% of these biopsies; condylomatous cervicitis, 26.9%; cervical intraepithelial neoplasia (CIN) grade 1, 12.6%; CIN grade 2, 8.4%; CIN grade 3, 12.6%; and reactive atypical endocervical cells, 0.8%. The remaining 274 of 393 ASCUS patients had subsequent Papanicolaou smears, but no biopsy correlation. Of these follow-up smears, 42.3% were within normal limits; 38% had benign cellular changes; 14.6%, persistent ASCUS; 5.1%, low-grade SIL; and none had high-grade SIL.

The results of this study are consistent with previously published data. The reporting of ASCUS on cervical papanicolaou smears leads to the detection of squamous intraepithelial lesions in a significant number of patients. Communication and understanding between cytopathologists and clinicians is necessary to assure an appropriate management.

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The Effects of Tamoxifen Therapy on Papanicolaou Smears: Review and Follow-up of 126 Patients

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Increased incidence of endometrial adenocarcinoma associated with tamoxifen therapy for treatment of breast carcinoma has been well documented. This study was undertaken to determine if tamoxifen causes a significant increase in the rate of cervical atypia in Papanicolaou smears. Between 1 June 1994 and 2 February 1996, the cytology section received 193 Papanicolaou smears on 126 patients taking tamoxifen. One patient was dropped from the study when she was found to have a past medical history of cervical cancer. The duration of tamoxifen therapy ranged from three months to five years, the median length of time being 2.6 years.

The overall atypical Papanicolaou smear rate, which included atypical squamous cells of undetermined significance (ASCUS) and atypical glandular cells of undetermined significance (AGUS) was 12% (15/125 papanicolaou smears). This is higher than the average cervical smear atypical rate (7% to 8%) at Danbury Hospital. Thirty-six patients showed benign cellular changes, often with repair (28.8%). Two postmenopausal patients were noted to have endometrial cells (1.6%).

During this study period, 32/125 had endometrial biopsies. The results showed 20 patients with inactive pattern (62.5%), five with proliferative (15.6%), four with endometrial polyps (12.5%), two with adenocarcinoma (6.25%), and one secretory (3.1%). One of the patients with adenocarcinoma had an endometrial polyp with focal superficial malignant transformation.

Seven patients had cervical biopsies: two with endocervical polyps (1 ASCUS, 1 AGUS), two with chronic cervicitis, two benign (all 28.6%), and one with condylomatous changes (ASCUS and AGUS) (14.3%).

The atypical Papanicolaou smear rate is slightly higher in tamoxifen patients. Applying χ^2 statistics and comparing atypical rates of tamoxifen patients with the random population, the difference is marginally significant (P=.0483). The atypias were generally mild. This suggests the possibility that tamoxifen is associated with reactive/reparative cellular changes rather than cellular atypia.

Cytogenetic Correlation of Bone Marrow Specimens: A Retrospective Study 1993-1995

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Bone marrow aspirates and biopsies are often performed to help in the diagnosis of premalignant or malignant diseases as well as other conditions. In potentially malignant cases a concomitant cytogenetic evaluation is requested to detect or confirm clonal abnormalities not readily apparent on light microscopy. Cytogenetic studies are also very helpful for evaluating the response of a patient to chemotherapy and in determining prognosis. Evolution from a chronic to an acute process or from a low-grade to a high-grade malignancy can also be detected by these studies.

We have performed a three-year retrospective review of all bone marrow karyotypes performed in 1993 through 1995 to determine how well the morphologic and karyotypic diagnosis correlated. The total number of bone marrow specimens evaluated were 280. Out of these, 122 (44%) had a diagnosable disease (definitive or suggestive of) on bone marrow evaluation, and 158 (56%) were nondiagnostic. Within the diagnostic category, 9% of the specimens had a diagnosis of acute myeloid leukemia (50% abnormal karyotypes, 38% normal karyotypes, and 12% culture failure). Eleven percent of the cases were myelodysplastic syndromes (41% abnormal karyotypes, 52% normal karyotypes, and 7% culture failure). There were 11% cases of myeloproliferative disorders (58% abnormal katyotypes, 39% normal karyotypes, and 3% culture failure). Cases with a diagnosis of plasma cell or a lymphoplasmacytic dyscrasia were 4.2% (33% abnormal karyotypes, 67% normal karyotypes). A diagnosis of a lymphoproliferative disorder was made on 5% of the cases

(36% abnormal karyotypes, 64% normal katyotypes). There were 2% cases of iron deficiency anemia, and all of these had a normal karyotype. One percent had other diagnoses (sarcoidosis, metastatic prostate cancer, idiopathic thrombocytopenic purpura, pernicious anemia, etc). Seventy-five percent of these had a normal karyotype and 25% had culture failure. In the nondiagnostic category, 84% of the specimens had a normal karyotype, 11% had an abnormal karyotype, and 5% had culture failure.

One patient with a nondiagnostic marrow (normal karyotype), and three patients with the diagnosis of a myelodysplastic syndrome (one normal and two abnormal karyotypes) subsequently developed acute myeloid leukemia over time (one normal and three abnormal karyotypes). One patient with the diagnosis of acute myeloid leukemia (abnormal karyotype), reverted to a normal karyotype after chemotherapy. Correlation between published cytogenetic aberration(s) and clinical diagnosis was found in the majority of abnormal cases.

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Survey on Intensive and Coronary Care Rotations in the Yale-affiliated Internal Medicine Residency Programs

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Most residency training programs are redesigning their curricula in response to the changing environment in medicine. This redesigning requires a prior assessment of the strengths and weaknesses in the current curriculum. One of the most common criticisms of residency training is that too much time is spent in intensive and coronary care rotations to the detriment of primary-care experiences.

We undertook a survey to find out how much time residents from 12 Yale-affiliated internal medicine residency programs spend in intensive care and coronary care rotations. Eleven of the 12 programs returned the survey before the deadline.

Results.—Rotation through the intensive care unit represents an average of 12% of the residency time, with a range from 3% to 19%. Rotation through the coronary care unit represents 10% of the residency time with a range from 7% to 16%.

Conclusion.—Contrary to our hypothesis it appears that in the Yale-affiliated internal medicine residency programs, intensive and coronary care rotations do not represent an excessive percentage of the total residency time. This is in compliance with the 1995-1996 essentials for Accreditation of Graduate Medical Education which require that the critical care unit experience must not exceed six months in three years of training.

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Five-Year Experience with Thyroid Needle Aspiration Cytology and Surgical Correlations: Comparison with Prior Five-year Interval Study

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Fine needle aspiration (FNA) of the thyroid for diagnosis has now become standard procedure in the United States. Although cancer of the thyroid is rare (four cases of cancer compared with 4,000 instances of thyroid nodules among one million population in the United States), before modern diagnostic procedures, especially FNA, it is estimated that 20 thyroid operations were performed to find one thyroid cancer. The present study was undertaken

to compare two successive five-year periods reflecting increasing experience with the gold standard of surgical assessment. There was a 195% increase in FNAs submitted for cytology, from 351 in 1986-1990 to 685 in 1991-1995. The table below compares surgical findings with cytologic diagnoses of FNAs during 1991-1995.

Levels of sensitivity for detection of malignancies rose to 90% compared with 27% in the previous study. Likewise specificity for benign lesions increased to 91% from 86%. The positive predictive value was 78% and the negative predictive rate was 96%. These values were 74% and 91%, respectively in the prior assessment. The rate of surgery was similar in each cytology class.

While increased experience may account for the marked improvement, and undoubtedly account for a twofold increase in preoperative identification of thyroid cancer, changes in threshold of suspicion and newer techniques have also occurred.

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			Surgical Findings — No					%
Cytologic Report	Cytology Class	Total Number	Operated No.	%	Cancer	Adenoma	Nodular Goiter	Other*
Benign/ Atypical	I & II	606	77	(12.7)	3 (3.9)	45 (58.4)	14 (18.2)	15 (19.5)
Suspicious/ Malignant	III & IV	36	36	(100)	29 (81)	7 (19)	0	0
Unsatisfactory		43	2	(4.6)	1 (50)	1 (50)	0	0
		685	115	(16.7)	33 (28.7)	53 (46.1)	14 (12.2)	15 (13.0)

* thyroiditis, diffuse hyperplasia, hemorrhagic cyst

Is Water Drinking Out of Vogue? A Changing Pattern to Be Recognized

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Fluid intake was primarily in the form of water and milk for young children at the beginning of this century. When fluoridation of city water was introduced 50 years ago, the amount of fluoride to be added was based on the assumption that tap water was the main source of fluid intake for children. The marketing of carbonated drinks began the process of changing the pattern of water consumption. Drinking habits of children have changed over the years with a remarkable growth in commercially marketed beverages.

We conducted a prospective study to obtain information on the fluid drinking pattern of children between the ages of two and 10 years of age. After informed consent, 91 parent-child pairs were recruited. In each pair parents were asked to keep a 24-hour fluid intake diary of their child. The mean total fluid intake for these children was 43.8 oz (1 SD = 14.4 oz). Stratification of fluid intake for children of different age groups showed an increase in total fluid intake with increasing age. The plot of total fluid intake in ounces *vs* age in years shows the amount of fluid intake has a wide range of scatter. As a fraction of the total fluid intake, the mean water intake for these children was 10.9 oz per day. This amount of water consumption is equal to 25% of the total fluid intake in the 24-hour period. Conversely, the mean consumption of beverages or milk by these children was equal to 32.9 oz. In the age group of two to five years, water comprised only 19% of the total fluid intake and in the age group of seven to 10, water consumption represented only 28% of the total fluid intake. Sixteen (17% of the total group studied) of these children did not consume any plain water during the study period of 24 hours.

With the average of consumption of plain water at 25% of the total fluid intake by the children studied, the practice of fluoridating drinking water with the assumption that children drink primarily tap water must be challenged. The large volumes of beverages consumed by children may negatively affect the wellness of some of these children with the potential of developing failure to thrive, chronic nonspecific diarrhea of childhood, hypocalcemia, and other nutritionally related disorders.

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Measles Outbreak Among School-Aged Children— Juneau, Alaska, 1996

AN outbreak of measles among school-aged children occurred in Juneau, Alaska, from 16 February through 25 April 1996. Of 63 confirmed cases,* 47 were serologically confirmed, and virus was cultured from 15; a total of 41 (65%) were among school-aged children (ie, aged six to 18 years). This report summarizes results of the epidemiologic investigation conducted by the Division of Public Health, Alaska Department of Health and Social Services (ADPH), which found evidence of measles transmission at schools despite high rates of coverage with one dose of measlescontaining vaccine (MCV).

The first five cases occurred among four students and a teacher at an elementary school; all had rash onset during 16-19 February. The 63 case-patients ranged in age from 8 months to 45 years (median: 11 years): one was aged <1 year; 10 (16%), 1-4 years; 41 (65%), 5-19 years; and 11 (18%), ≥20 years. Two persons with measles were hospitalized, including a child with dehydration and an adult with neutropenia. Measles virus was isolated from nasopharyngeal specimens obtained from 15 patients and from urine specimens from three of these same patients; isolates were genotypically similar to viruses recently isolated from Europe but different from isolates circulating in the United States during 1989-1992.[1]

Probable sites of measles acquisition were school (31 [49%]), home (14 [22%]), indoor soccer games (seven [11%]), and other settings (six [10%]); the site was unknown for five (8%). Cases were more likely to have been acquired at school during the first 35 days of the outbreak (19 [59%] of 32) than during the remaining 35 days (12 [39%] of 31).

Cases occurred among 40 students and four faculty members at seven of eight public schools in Juneau; one case occurred in a student at a private school. Schoolspecific incidence rates were highest at the high school annex† (five [4%] of 127), a middle school (15 [2%] of 687), and the elementary school attended by the index patient (seven [1%] of 525). At the beginning of the 1995-96 school year, approximately 99% of 5,400 public school children in Juneau had received at least one dose of MCV. The number of children who had received more than one dose of MCV was unknown; however, a second dose of measles-mumps-rubella vaccine (MMR) for school-aged children enrolled in public or private school was not required in Alaska at the time of the outbreak.

Of the 63 case-patients, 33 (52%) had received only one dose of MCV on or after their first birthday, and 30 (48%) had never been vaccinated with MCV. Among the 30 who were not vaccinated, 24 (80%) were eligible to be vaccinated (ie, aged ≥12 months and born on or after 1 January 1957); of the 24 who were eligible to be vaccinated, all 12 school-aged children had religious exemptions, and two of nine children aged one to four years were siblings of these unvaccinated schoolchildren.

Although no source case was identified, this outbreak coincided with a measles outbreak associated with the Seattle-Tacoma (Washington) airport, the major airport gateway to Juneau. The first three case-patients in the Seattle area had onset of measles during 2-4 February 1996; these cases occurred among two airport workers and an airport visitor who, on 20 January, were at the Seattle-Tacoma airport concourse of the main airline serving Juneau. Because measles transmission probably occurred in the airport on 20 January, a Juneau-bound passenger also may have been exposed and may have become the source case for the Juneau outbreak. Isolates from the Seattle cases were not available for comparison.

Measures to control the outbreak were implemented beginning 17 February and included efforts to vaccinate school-aged children and contacts of persons with suspected cases with at least one dose of MCV; active surveillance for rash illness in doctor's offices, schools, and the one hospital emergency department in Juneau; and

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*A confirmed case was laboratory confirmed or met the clinical case definition and was epidemiologically linked to a confirmed or probable case. A clinical case was defined as an illness characterized by a generalized rash lasting ≥3 days; a temperature ≥101°F (≥38.3°C); and cough, coryza, or conjunctivitis. A problabe case met the clinical case definition, had noncontributory or no laboratory testing, and was not epidemiologically linked to a probable or confirmed case.

†A separate building with a small number of students.

weekly fax transmissions of outbreak updates to health-care providers and public health nurses in Juneau and all other areas of southeast Alaska. As a result of this outbreak, ADPH is requiring all Alaska schoolchildren in kindergarten and first grade to receive a second dose of MCV for school entry.

Reported by: P. Rohrbacher, K. Miller, M.P.H., L. Cameron, M. Lexon, C. See, K. Slotnick, J. Miller, M. O'Bryan, G. Herriford, K. Glass, T. Schmidt M.S., W. Evans, P. Kunkel, B. Bond, M.S., J. Maddux, D.V.M., M. Masters, Ph.D., M. Westcott, D. Ritter, S. Kew, L. Wood, M.P.A., G. Yett S.A. Jenkerson, M.S.N., M. Schloss, M.P.H., E. Funk, M.D., M. Beller, M.D., P. Nakamura, M.D., J.P. Middaugh, M.D., State Epidemiologist Division of Public Health, Alaska Department of Health and Social Services. J. Boase, M.S., Seattle-King County Health Department, Seattle; B. Lamont Washington Department of Health. Measles Virus Section, Respiratory and Enterovirus Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Measles Activity, Child Vaccine Preventable Disease Branch, Division of Epidemiology and Surveillance, National Immunization Program; Division of Applied Public Health Training (proposed), Epidemiology Program Office, CDC.

Editorial Note: In this measles outbreak, the large number of cases among school-aged children was attributed primarily to sustained transmission in schools characterized by high coverage levels with one dose of MCV. Before this outbreak, no measles transmission had been documented in Alaska schools since 1976, and approximately 99% of Juneau school children had received at least one dose of MCV; however, outbreaks have occurred previously among school-aged children vaccinated with one dose of MCV.[2] In addition, consistent with outbreaks that occurred in the United States during 1995, viral isolates from cases in Juneau were genotypically similar to viruses recently isolated outside the United States and were not related to viruses that circulated during the measles resurgence in the United States during 1989-1992.[1] This finding suggests that recent outbreaks have resulted from importation of measles with subsequent transmission in the United States.[1]

In 1989, as a result of continued measles outbreaks among school-aged children vaccinated with one dose of MCV, the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Pediatrics recommended a routine two-dose measles vaccination schedule. In addition, ACIP recommended that, du ring outbreaks, a second dose of MCV be administered to children who had received only one dose of MCV before the outbreak.[3] A measles outbreak (ie, one case of confirmed measles in a community) should prompt vaccination of potentially susceptible persons. During school outbreaks, revaccination with MMR in affected schools is recommended. Revaccination consists of providing a second dose of MCV to all students, their siblings, and school personnel who were born during or after 1957 and do not have documented receipt of two doses of MCV on or after their first birthday or evidence of measles immunity.[3] Revaccination also should be strongly considered in unaffected schools within the same community. The extensiveness of revaccination programs may vary with the magnitude of interaction at sporting and other interscholastic events and should strongly be considered when children in more than two schools are affected.

A routine two-dose MCV schedule for school-aged children will protect almost all of the estimated 2% to 5% of children who do not respond to the first dose.[4] The first dose of MCV should be given at age 12 to 15 months and the second dose at age 4 to 6 years or 11 to 12 years.[3] Efforts to vaccinate the entire school-aged population in the United States with two doses of MCV are necessary to decrease the number and size of future measles outbreaks and to achieve elimination of measles in the United States. The speed at which this occurs locally depends on when two-dose MCV requirements were implemented in each state and the number of cohorts covered by the requirement. Forty-two states, including Alaska, require at least one school-grade cohort to be vaccinated with two doses of MCV. ACIP is revising recommendations for measles prevention that will encourage all states to achieve full coverage with two doses of MCV for all school-aged children in kindergarten through 12th grade by 2001.

Implementation of the two-dose strategy has been important in reducing measles incidence levels to current record low levels. In Finland, measles transmission was successfully eliminated following initiation of a two-dose MMR vaccination program in 1982,[5] similar in concept to the U.S. strategy. Countries of the Western Hemisphere, with the technical assistance of the Pan American Health Organization, have reduced measles incidence more than 95% by using a strategy based on periodic mass vaccination campaigns.[6] These successful efforts to control measles outside the United States are important because long-term success in measles-control efforts in the United States and other countries require strengthened global control of measles.

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The Explosive Growth of Management Services Organizations (MSOs): What Does It Mean? What Does It Portend for the Future?

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IN the last three years, Management Services Organizations (MSOs) have become all the rage among physicians, among hospitals, and among Wall Street investors. By my reckoning, about 1,200 MSOs have sprung up across the United States. (Compare this to about 2,500 existing IPAs and 3,000 PHOs.) It is difficult to estimate the exact number of MSOs because they are not publicly registered, may operate under different titles, and are started by varying types of organizations—physicians, private investors, billing companies, hospitals, and managed care organizations.

To add to the confusion, MSOs may perform different functions—some may simply be service bureaus, other may offer comprehensive practice management services for medical groups, and still others may acquire the hard assets of individual practices and consolidate these practices into a regional or national firm. What MSOs share in common is that they provide services for managing managed care contracts and for managing practices. Ideally, these services will increase the valuation of physician practices by gaining more managed care contracts, by making the practices more efficient, and by helping physicians become more productive.

We can say with exactitude that 31 Practice Management Companies have gone public through the Initial Public Offering process, and that these companies are prominent on the radar screen of Wall Street because of their stock market performances since their offering (see Table 1 for data through 26 August 1996 on eight of these companies).

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Why the Explosive Growth of MSOs?

Reasonable people may differ as to why MSOs are growing so fast. Here are my explanations.

1. *The macro-response to managed care and the thirst for capital.* Anybody who has been paying any attention at all to the managed care market knows you have to be big and to be better to compete. You have to have economies of scale and sophistication. You have to have such critical tools as information systems, management expertise, capitation, networks of physicians for wide geographic coverage, and the ability to coordinate coverage across the spectrum of care. And, most of all, you have to aggregate and integrate physicians into organizations so you can have access to capital. And to qualify for capital, physicians will have to operate within the context of disciplined business organizations.

   There is a tremendous thirst for external capital among physicians organizations. If this capital comes from hospital systems, many physicians feel they will become servants of those systems. Physician groups need capital to merge with other practices, to form new organizations, to buy out retiring members, to build new clinics, to hire or acquire new physicians, and to develop sophisticated new information systems.

   Three basic sources of investment capital now exist for physicians: hospital systems, venture capitalists, and publicly traded physician management companies, such as Med Partners, PhyCor, or FPA Medical Management. Hospitals are major players and want to wrap organized integrated delivery systems around themselves. Venture capitalists want in the game so they reap a 30% to 50% return on their

Table 1.—Physician Practice Management (PPM) Valuation Trends

Initial Public Offering (IPO) Aftermarket Performance of Physican Practice Managements (PPMs)				
Company Name – TICK	**Offering Date**	**Offering Price**	**08/26/96 Price**	**% change (from offering)**
Phycor, Inc. – PHYC (1)	01/22/92	$7.11	$33.00	364.1
FPA Medical Mgmt. – FPAM (1)	10/21/94	5.00	23.75	375.0
MedPartners/Mullikin – MDM	02/22/95	13.00	20.00	53.8
AHI Healthcare Systems – AHIS	09/29/95	14.00	5.50	(60.7)
Average				**183.1**
EquipMed, Inc. – EQMD (1)	11/15/93	7.00	7.13	1.9
Physician Reliance Network – PHYN (1)	11/23/94	9.75	12.00	23.1
MedCath, Inc. – MCTH	12/07/94	14.00	15.38	9.9
Orthodonic Centers of Amer – OCAI (1)	12/20/94	5.50	35.25	540.9
OccuSystems, Inc. OSYS	05/09/95	14.00	28.25	101.8
American Oncology – AORI (1)	06/13/95	10.50	9.00	(14.3)
Physicians Resource Group – PRG	06/23/95	13.00	23.63	81.8
Average				**106.4**
Coastal Physicians Group – DR	06/21/91	11.50	5.13	(55.4)
InPhyNet Medical Mgmt. – IMMI	08/19/94	12.00	14.00	16.7
EmCare Holdings – EMCR	12/08/94	23.75	14.00	115.9
STAT Healthcare – STHC (1)	04/21/95	3.75	6.25	66.7
Pediatrix Medical Group – PEDX	09/20/95	20.00	47.25	136.3
Sheridan Healthcare – SHCR	10/31/95	13.00	8.50	(34.6)
PhyMatrix Corporation – PHMX	01/24/96	15.00	24.63	64.2
Average				**44.2**
Dow Jones Industrial Average	06/21/91	2,965.56	5,693.89	92.0
Standard and Poor 500	06/21/91	377.75	663.88	75.7

Source: Townsend & Fran, Durham, North Carolina

investments in a promising new field—the consolidation of physician services. Practice management companies are anxious to provide capital so they can meet their Wall Street growth targets and increase their stock market value and satisfy their investors. The choice of capital for most doctors is between a homegrown integrated system dominated by not-for-profit hospitals, and an out-of-town company with no commitment to the community but with a higher potential return. It is not an easy choice.

Physicians are going to need capital if they're going to play with such big dogs as HMOs, managed care organizations, insurance companies, and hospitals. If they're going to play on the same field, physicians will have to be big dogs themselves. Hospitals have consolidated, managed care companies have consolidated, the Blues have consolidated, pharmaceutical companies have consolidated. The time has come for physicians to consolidate. We can no longer have 600,000 physicians practicing in 400,000 locations and operating as a cottage industry. To survive and take back medical care, physicians are going to have to join together in equity alliances—which are most likely to be a combination of a core group practice, a linking MSO, and an affiliated IPA—and to have information systems to manage their business and to give them constant feedback to monitor their performances and to improve their quality.

2. *The recognition that physicians are the core of the delivery system.* This recognition may seem so obvious as to be trite. But it is not trite. It is why Wall Street and large health care organizations have targeted physician acquisitions and changes in physician behavior as the key to future success. It is why hospitals stepped up their acquisitions of physician practices by 60% in 1994 and 70% in 1995. It is why Physician Practice Management firms are scrambling to acquire as many practices as they can in the next three to five years. It is why multiple state medical associations, including Michigan, Illinois, Texas, Pennsylvania, Kansas, and Missouri, are exploring or implementing MSOs.

When you realize that physicians are the only ones licensed to practice medicine, that physicians are responsible through their pens for 80% to 85% of costs, and that physicians with equity in large medical groups and IPAs in the Western United States have shown the capacity to outperform HMOs in their ability to lower costs and to satisfy patients, you begin to get a sense of why physicians in properly structured organizations are feeling so empowered.

In California, physician organizations feel strongly that they have supplanted hospitals as the heart of the health system and that "virtual integration" with physicians as independent contractors has just as many advantages as vertical integration under a hospital umbrella:

> Organizing a delivery system around the hospital has a less compelling logic with each passing year. There exist few scope economies between hospitals and physician services that cannot be achieved through contract; little advantage over integrated systems over contractual partnerships in bearing capitation risk; little if any gain in shifting the transaction costs of negotiating, monitoring and enforcing agreements from the external market to the internal pseudomarket; and only modest sharing of core competencies between running a hospital and running a network of primary care clinics.[1]

3. *The recognition among physicians themselves that they need a solid, well-managed, and well-financed business organization to represent them on the market.* Many physicians increasingly feel they just want to practice medicine but they also want to shape the change process by being engaged as equity partners and with corporate partners who represent their best interests. On the whole, physicians like MSOs because they perceive MSOs as shelters in the gathering managed care storm. To physicians, MSOs offer these benefits:

- MSOs offer an organizational vehicle to level the competitive playing field with hospitals and managed care organizations.
- MSOs offer an opportunity for physicians to organize into business-minded alliances capable of acquiring capital to add other practices, invest in managerial and management enterprise, and to install information systems.
- MSOs offer an opportunity for equity in a physician-centric and physician-cooperative enterprise which provides contract management and practice management services.
- MSOs offer physicians the chance to be part of an efficiently run business with economies of scale that can attract managed care contracts.
- MSOs offer physicians a group environment in which they can learn from each other and from constant feedback from information systems.
- MSOs offer physicians an attractive investment opportunity and an exit strategy for retirement once their careers are over.

What Are the Characteristics of Successful MSOs?

According to Thomas Gorey, President of Policy Planning Associates, a Crystal Lake, Illinois, consulting firm that analyzed seven successful MSOs for the AMA and five other medical societies, successful MSOs share these 15 features:[2]

1. They blend contract management and practice management services.
2. They require substantial capital, at least $1 million and to $20 million to develop and implement.
3. They have a clear vision and a strong business plan.
4. They have a qualified, experienced, and strong administrative staff.
5. They balance physician, administrative, and other interests in governance.
6. They're aggressive and take risks.
7. They incorporate medical groups and IPAs in their structure.
8. They aggressively expand geographically and deliver medical care from a distance.
9. They develop strategic "win-win" relationships with hospitals and payers.
10. They stick to their core competencies and reject the option of forming HMOs.
11. They concentrate on quality management.
12. They focus on utilization management.
13. They accept greater and greater levels of risk.
14. They pay their doctors through a combination of salary and financial incentives.
15. They recognize the central importance of information systems, but realize no perfect system yet exists.

Concluding Remarks

The last three years have witnessed an explosive growth of MSOs. These organizations, which may be owned by physicians, hospitals, private investors, or publicly traded companies, or a combination, provide contract managed and practice management services to physicians and may employ physicians. MSOs are tangible and highly visible evidence of the consolidation of the physician services industry, and are attractive to many physicians because they empower physicians competitively and position them

favorably in the rapidly evolving $1 trillion health care industry, which is increasingly dominated by managed care.

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2. Gorey T: Case study analysis of management services organizations (MSOs), sponsored by the American Medical Association, American Academy of Otolaryngology-Head and Neck Surgery, Indiana State Medical Association, Massachusetts Medical Society, Medical Society of the District of Columbia, Michigan State Medical Society. For copies write or call, Thomas M. Gorey, J.D., Policy Planning Associates, 355 Cumberland Lane, Crystal Lake, IL 60014, 815-459-4516, $25–members of a sponsoring medical society, $95–nonmembers.

New Handbook on Child Abuse and Neglect Available

The state Department of Children and Families, in conjunction with the medical community, has produced a handbook for health-care professionals on "Identifying, Reporting, and Managing Suspected Child Abuse and Neglect."

The handbook has been endorsed by the Connecticut Chapters of the American Academy of Pediatrics and the American College of Emergency Physicians, the Connecticut State Medical Society and its Orthopedic Section, and the Connecticut Academy of Family Physicians.

The handbook is designed to:

- Help health-care professionals identify the signs, symptoms, and characteristics of child abuse and neglect;
- Outline the reporting requirements and procedures for mandated reporters;
- Recommend ways to manage suspected child abuse or neglect cases, including ordering diagnostic procedures, using the 96-hour hold, collecting evidence, writing a medical affidavit, and discussing the situation with the child's parents; and
- Explain the role of the Department of Children and Families when a report of suspected child abuse or neglect is received.

Free copies of the handbook are available by calling the Department of Children and Families' Medical Director's office at (860) 550-6460 or the Public Information office at (860) 566-4396.

Our Past Is Their Future: The Formation, Development, and Sale of M.D. Health Plan

MICHAEL M. DEREN, M.D. AND ROBERT J. BRUNELL, M.A.

THERE is currently intense interest in physician-owned-and-operated managed-care entities from IPAs, PHOs, and HMOs to MSOs. Direct contracting by physicians is being intensively evaluated and managed care is moving toward physician-controlled companies. Recently physicians in Connecticut sold their physician owned and operated HMO, M.D. Health Plan, to a large stockholder company.

This seems contrary to today's trend where physicians are taking control of the health-care industry in a variety of ways. Of the nation's 562 HMOs, only 39 have doctors as full or partial owners. But physician groups around the country are beginning to raise funds to form HMOs, two alone in Florida, where physicians in the Palm Beach, Dade, and Broward county area want to sell 18,500 shares of stock at $3,500 to raise $64.5 million. More than 800 doctors have already raised $1.5 million. The Florida Medical Association, working with other physician groups, is also considering forming a doctor-run HMO. At the Connecticut State Medical Society (CSMS) we have responded to 100 requests for our HMO start-up materials in the past two years.

Abbreviations Used in Text

HMO=Health Maintenance Organization

IPA=Independent Practice Association

MSO=Management Services Organization

PHO=Physician-Hospital Organization

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Many around the country have found it difficult to understand why Connecticut physicians sold their HMO when other doctor groups are trying to form one. However, we did retain total control of our state medical society-owned statewide IPA, which is now contracted for 15 years to supply physician services to the patients of the HMO, to set the standards for and to monitor the quality of its patient care, and to set policy for physician credentialing and compensation.

Nevertheless, an explanation of the history, formation, development, and selling of Connecticut's M.D. Health Plan is in order. With the specter of the relatively new concept of national HMOs entering their market in the mid 1980s, Connecticut physicians first considered forming an IPA and a statewide HMO through their State Medical Society in 1985, and authorized a $100,000 feasibility study by year-end. Much of this was brought about through the sincerity, enthusiasm, and stature of the late William A. Whalen, M.D., surgeon of Willimantic, then president of the society, and by the hard work of CSMS staff.

Even before 1985, the Medical Association of Georgia (MAG) had considered forming a statewide HMO and after 18 months of planning, Georgia's HMO became operational on 1 January 1986. Following extensive negotiation, 2,150 of the 5,000 practicing physicians in Georgia joined the HMO. The Georgia HMO did not thrive as Connecticut's did for a variety of reasons. One possible reason was that medical care in Georgia at the time revolved around two areas, the Atlanta area, and the other the rest of the state. Because of strong feelings on the part of Atlanta physicians, the MAG elected to form an HMO to deliver care to the patients outside the Atlanta area. HMOs initially work well in metropolitan areas where there is a high concentration of physicians, but are difficult

to start in rural areas. The geographic dichotomy in physician care extant at the time contributed to the difficulties of Georgia's statewide HMO.

In densely populated Connecticut, which is virtually all "urban," there was no such dichotomy and hence, after a favorable feasibility study and a great deal of debate within the Connecticut State Medical Society (CSMS) both in council meetings as well as in the House of Delegates, physicians voted to form CSMS-IPA and the M.D. Health Plan (MDHP) in May 1986. The goals and objectives of this were: to establish a cost-effective health-care delivery system, to keep control of heath care between physicians and their patients, to compensate participating IPA physicians on a competitive basis, to develop a system which established levels of appropriate high quality care, and to respect physician judgment, independence, and professionalism. The mission statement included provisions for an open-panel statewide IPA with no gatekeepers, to maximize freedom of choice for patients in every locality within the state. This open-access system would promote the highest quality of care and promote medically appropriate utilization through physician peer review in accordance with standards designed and maintained by CSMS member physicians through statewide monitoring systems. This is essentially the initial statement of the CSMS-IPA's incorporation. The feasibility study had identified two "empty niches" in the market for MDHP to fill, statewide employers, and very small employers, if only the startup could be expedited within a brief "window of opportunity."

Following the May 1986 House of Delegates authorization, CSMS staff organized the CSMS-IPA by a mail campaign. Within six weeks, 2,600 of the 5,000 CSMS members had contributed $500 each, raising $1.3 million "seed" money for the HMO development task ahead. By November a request for a proposal (RFP) was issued, a development company retained, and an 850-page state licensure application was drafted. At the same time attorneys were drafting a prospectus and offering for the Security and Exchange Commission (SEC) for a February 1987 stock offering.

Voting stock was offered at $3,000 per physician with only IPA-participating physicians being eligible to purchase it. An additional $4.5 million was raised which eventually proved to be insufficient to capitalize the company adequately, leading to recurring problems and ultimately its being sold. Nevertheless, with some temporary help from CSMS, the plan became profitable after only five quarters, grew very rapidly, and gradually increased its capital to the $9 million range before its merger. For several years, the M.D. Health Plan remained Connecticut's only statewide HMO. In 1992, M.D. Health Plan was cited by *Inc. Magazine* as the third fastest growing small company in the United States.

Although there was physician control on panels, utilization review, quality assurance, and fee committees, M.D. Health Plan acted and functioned much as any other HMO did. This was necessary in order to remain competitive in the managed-care business environment. Many physicians in Connecticut believe that the formation of M.D. Health Plan slowed down the advance of predatory managed care in the state.

Once managed care came to Connecticut in a big way, companies came with billions of dollars of assets. This meant that M.D. Health Plan was at a market disadvantage since it did not have the deep pockets associated with the billion dollar conglomerates which were entering the Connecticut market.

As a consequence, the Board of Directors of M.D. Health Plan felt it important to seek deep pocket capital partnership to be competitive. The Board hired a consultant to assist in obtaining a partnership or corporate buyout. After much consideration of several offers, Health Systems International (HSI) was deemed the best partnership/buyout alternative.

The MDHP-HMO Board and the CSMS-IPA Board both voted to approve and allow that this buyout alternative be presented to the shareholder physicians. The arrangement was presented to the CSMS House of Delegates for information only, as the owners of M.D. Health Plan were the shareholding physicians. Undoubtedly, an overwhelming argument for selling the HMO was that for an initial investment of $3,500 physician stockholders would each reap a benefit of $56,000 when the stock was sold. It must be emphasized that the ultimate decision for selling the company rested with the physician shareholders of M.D. Health Plan. Many non-shareholding physicians may have questioned the advisability of selling the company, having nothing to lose or gain.

Health Systems International bought M.D. Health Plan for $101 million, proving that a state medical society and its members can develop and operate a highly successful and valuable HMO. After the merger, CSMS-IPA retained its long-term contract with M.D. Health Plan and the all-physician boards of both organizations (the HMO and IPA) continue to function intact, much as before, but most senior management posts have changed, except those covering medical affairs and health services. The CSMS-IPA remains a wholly owned subsidiary of the CSMS and retains its contractual level of control for physicians over credentialing, clinical quality and utilization, and physican compensation areas, within the limits of negotiated per member per month (PMPM) capitation levels.

Certainly a $56,000 return on a $3,500 investment is a very tempting inducement to sell. Over 97% of physicians voted to sell (I was not among them).One hundred percent of them cashed their checks. Many of the original stock owners were retired, perhaps others needed the money for college tuitions or other important reasons. Who could blame them? How would you have voted? The argument could be made that MDHP did help and was a profit for its share holding physicians. Some argued the company was worth more and would become still more valuable with time. But a physician-controlled and physician-owned company would profit all doctors and ultimately their patients only if given generous reserves. As a result of the terms of the sale, MDHP has become a much more *secure* vehicle for physician control of managed care in a maturing HMO market where only the deepest pockets survive. And given the terms of the current contract, MDHP patients still have open access to the largest physician panel in the state, with no gatekeepers.

Many state medical societies are now trying to develop an HMO like that which Connecticut physicians formed, developed, and then sold. The question that now arises is: can state medical societies form physician-owned HMOs and then prevent their sale? There are several ways to structure the ownership of an HMO, each with strong and weak points. Accountants, actuaries, attorneys, and other specialized managers must be consulted and hired for advice on how to structure the company. There are many ways to structure an HMO but we shall review only three common ones.

First is a stock company. No matter who owns the stock or how the stock is owned, someone else will eventually buy it. Companies are living entities which must change to survive and hence if not in one or 10 but in say 20 years, the stock will be sold and control will be lost.

Second is having a company with two classes of stock, voting and non-voting, which appears to make taking control from the original investors more difficult, but under some circumstances, nonvoting shareholders must be permitted to vote, particularly on issues of control. Remember if you have a stock company eventually it will be sold, friendly or otherwise. Setting the vote to sell high, for example, 90% of the voting stockholders rather than a simple majority vote being required to sell the company, may be overridden by corporate laws concerning the rights of nonvoting share holders.

Third is a mutual company where policy holders own the company and the percent of ownership is proportional to the premium paid. Dividends are given by reduced premiums. A mutual-basis HMO is probably easier to capitalize and retain control of, but more difficult to structure. Such companies may not be possible to form in some states.

Should the HMO be for-profit or not-for-profit? Most physician-owned companies start out as not-for-profit and when they are sold go on the market as for-profit entities. In order to do this the not-for-profit must give away millions of its dollars to charity rather than keep the capital it accrued as a nonprofit entity. Physicians Health Services, a Connecticut HMO, gave $5 million to the University of Connecticut, and Wellpoint gave billions to the state of California via a charitable foundation they control. Often these millions or billions are not given in "real" money but in the form of the new company's stock, often nonvoting. MDHP has always been a for-profit corporation.

Options for compensating senior management are many, but tying management bonus plans to the value of stock would seem to provide incentive not only for performance, but also for a sale. Nevertheless, giving bonuses is better than giving stock to senior management. State laws vary regarding insurance companies. Connecticut's are strict, which made it difficult to start the HMO, but helped to insure that once started it would be financially successful. As we physicians are not lawyers, accountants, or venture capitalists, we must hire them and use them collaboratively so as to profit mutually. Ultimately patients will be the winners, especially when a physician-controlled company has patient care medical ethics as its bottom line rather than business ethics.

Other considerations on forming an HMO are:

1. Be sure capitalization is adequate. (Perhaps even with a provision to return part of the withhold as stock.)
2. Be sure that senior management is not given an incentive for reaching a financial windfall should the company be sold. The sale of MDHP was worth millions to previous senior management.
3. There should be assurances that physicians will not and cannot sell their stock in the HMO and also reap enormous benefits. MDHP bylaws provided that the stock be held in a method which guaranteed that it could never be sold to anyone other than the company or physicians participating in the plan, insuring that physicians always retain ownership and control. But MDHP bylaws could be and were changed by a 2/3 vote! Return on investment can be on increased provider compensation, in knowing the company is physician driven, or be given at time of full retirement from practice. It is difficult to ask for the substantial investment necessary adequately to fund an HMO today and not give something tangible in return.
4. When establishing the company, most of its staff will be coming from commercial HMOs. Be sure that

senior management and employees realize that the direction and development of this company will be by physicians and for physicians and their patients. Anything else is unacceptable. This is different from the bottom-line business ethic. The business ethic of a physician-founded HMO should be rooted in a patient care/medical ethic. Even so, it must be accepted that it must do many of the same things that commercial HMOs do to keep competitive and viable. It cannot always be as physician-friendly as a medical society! It may not always be popular among physicians.

A final caveat. When state societies found an organization, a board of directors separate from the society is developed. Physicians form and staff this board. These physician boards are then advised that their fiduciary responsibility is to that entity and not to the medical society or to physicians and their patients. The physicians initially sitting on the HMO boards are usually the same as those from the state medical society who did the diffficult task of forming the HMO. Their interests are also for the good of the society, physicians, and patients. As time progresses new doctors staff the HMO board and then may begin to see only their fiduciary responsibility to the HMO. This is an insidious problem—an insurance company's or HMO's or MSO's mission is *bound* to vary from that of a medical society, patients, and at times from that of medicine itself.

Even so, it is far preferable for *physicians* to be mediating these conflicts on corporate boards and working committees. Physicians just cannot stop *caring* for their patients. Perhaps that is why MDHP is now regarded by so many employee groups as the most *patient*-friendly HMO on the scene. If given a choice in the matter, they will most often choose M.D. Health Plan. In the words of the Plan's most recent billboard campaign, "Wouldn't you rather have your own M.D.?"

Of course.

Dr. Elihu Hubbard Smith and the Beginning of Medical Communication Among Physicians in America

SIMON W. LOWENTHAL

DR. Elihu Hubbard Smith was a prominent American physician in the early days of the new Republic. As a practicing physician, he devoted his life to the study of medicine, and as a medical editor, author, and publisher, he devoted his energies to the democratic ideal of providing equal access to the latest of medical knowledge for all American physicians. In 1797 he published the first American medical journal, *The Medical Repository*. It was meant to be "... a history of the diseases of America...."[1] In so doing, Dr. Smith fostered in the American medical community the same spirit of independence from Great Britain that had shaped the American Revolution. *The Medical Repository* was at the cutting-edge of medical observation and scientific progress in the late 18th century.

Elihu Hubbard Smith was born in Litchfield, Connecticut, in 1771. Elihu's father, Dr. Reuben Smith, helped to found the Litchfield County Medical Society in 1767, the oldest medical society in the United States still in existence.[2] According to records, the group was formed to...

> promote professional standards in medicine by regulating ethical behavior among members, by working toward the licensing of qualified physicians; and by continuing members' medical education through the sharing of information and observations.[3]

When the association was first formed, anyone could practice medicine regardless of education or medical training.[2] At the June meeting in 1767, testing of new physicians began, and one new man said he would like to take the examination. When he passed and was admitted to the group, the examination became the first given anywhere in the country.

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Elihu's hometown, Litchfield, Connecticut, was a well educated, intellectual community for its time. It was in Litchfield that the first law school in the United States was opened by Judge Tapping Reeve. One of the first schools for the higher education of women was started there by Miss Sarah Pierce.

In addition to its stimulating intellectual environment, Litchfield was a truly patriotic town during the American Revolution. Not only did Litchfield convert scrap metal into bullets and weapons, but it also served as a munitions base. Elihu's house was located on the north side of the Litchfield Green nearly across from the munitions depot which was guarded 24 hours a day by Revolutionary soldiers. After New York fell to the British, Litchfield became a crossroads for military travel because it was located on the route from Hartford to West Point. Many noted Revolutionary generals were received in its various taverns including General George Washington to whom Elihu was introduced when he was only eight years old. These experiences no doubt had a large influence on Elihu's formative childhood years. As he states in his diary, it was at age six that:

> Septr. 1777-six. I was now old enough to understand something of the nature of the contest my country was engaged in, and made three attempts to escape from home and accompany the soldiers to the field.[3]

Elihu's father served the military as a medical examiner and saw the war effort as worthwhile on the whole, but, unlike many fathers of the time, refused to let his son become an infantryman, but rather stressed education; he held that a good education was essential. There is much speculation as to where Elihu actually received his basic education but in his diary he points out that he enrolled at Yale College at age eleven:

> Septr. 1781 ... The time at last arrived when my fellow-students were to set forward for New Haven, to become candidates for admission into college ... I was to be the companion of the others in this journey ... The question now occurred to me, whether I should not also be examined with the others? ... I was curious to observe the mode of proceeding and to mark the success of my fellow students: was I not as well prepared, as the greater number of them? ... It was not material if I failed-since I had five years more in which to prepare myself for the ultimate trial, if I succeeded, how honorable my youth! ... The subject was discussed at large; and I resolved to venture.... The examination over, the Tutors consulted together, and the result was that all from Litchfield were admitted, freely, and with great approbation. I had entered my twelfth year exactly one week preceding my Examination and admission. Here, then I terminate the history of the first period of my life.[4]

While at Yale, he most likely took courses in Hebrew, science, and natural philosophy.[5] It was also at Yale that he joined what was one of the first literary clubs in America, the Linonian Society.

After he completed four years at Yale in September 1786, "Smith was too young to enter any profession."[6] He was then enrolled by his father in the Greenfield Academy near New Haven under the instruction of Dr. Timothy Dwight for the next two years.[7] While there, he became versed in literary and classical studies, and afterward Elihu went to Litchfield and studied medicine for the next two years under his father. "a physician of excellent standing"[8] His apprenticeship complete, Elihu was sent to Philadelphia to attend some lectures given by Dr. Benjamin Rush. Being a delegate from Pennsylvania to the Continental Congress, a signer of the Declaration of Independence, and "a physician general of the Army hospitals of the Middle States," Rush was in a large part responsible for Philadelphia's reputation as the medical center of the nation.[9]

When these lectures were completed, Dr. Elihu Hubbard Smith moved to Wethersfield to begin his practice of medicine. While there, Smith became an officer of the Hartford Medical Society and also published *American Poems, Selected and Original*, in 1793.[10] He did so after much encouragement from his friends of the Hartford Wits, a literary club to which he belonged. This group was the first American Literary Society.[11]

In the same year that this anthology of American verse was published, Dr. Smith moved to New York. In 1796 the governors of the New York Hospital elected him to be an attending physician.[12]

It was around this time that Elihu took up a correspondence with William Buel which was solely medical in purpose and was a continuing discussion of the pestilential fever. He was the first person to connect the fever, which he himself caught and died from, with mosquitoes although he did not recognize that the mosquitoes were the actual carriers. "The irritation, restlessness, and constant watchfulness and fatigue, occasioned by these animals no doubt predisposed the well to be affected by the fever."[13] Smith wrote several essays on the subject of the "bilious fever" which were in the form of letters to William Buel and which he included in the publication of *The Medical Repository.*

> The pestilential diseases which, within a few years, seem to have prevailed with uncommon mortality in many of the principle towns of the United States, have attracted universal attention, and conferred an unexpected, and perhaps undue importance on the question,—"Whether is the Yellow or Pestilential Fever, as it has appeared in this country, since the year 1790, a disease introduced or imported from abroad, or one generated among ourselves by local causes.[14]

This correspondence became the basis for Smith's articles in *The Medical Repository* in 1797.

Friends encouraged him to publish his correspondence with William Buel. After Noah Webster chose not to include Smith's letters in his collection, Smith became obsessed with the idea of getting the letters and some of his other work published. He wrote to William Buel in 1796:

> As Mr. Webster has relinquished his plan of continuing his Collection, of taking it up myself, on a far more extensive scale, and publishing an annual volume; the principle object of which will be the preserving and collecting of the materials for a history of the diseases of America as they appear in the several seasons.[15]

What Dr. Smith finally succeeded in getting published was known as *The Medical Repository*, published in 1797 in conjunction with Drs. Samuel L. Mitchell and Edward Miller. His contributions to *The Repository* include "History of the Plague of Athens"; "A Case of Mania Successfully Treated by Mercury"; "Observations on the Origin of the Pestilential fever Which Prevailed in the Island of Granada in the years of 1793 and 1794"; "On a Singular Disease with Which Infants are Sometimes Affected"; "The Natural History of the Elk"; "On the Pestilential Diseases which Appeared in the Athenian, Carthaginian, and Roman Armies in the Neighborhood of Syracuse."

The first volume of *The Repository* was limited to contributions from a few authors, including himself and Dr. Benjamin Rush.

> The first Number of the *Medical Repository* makes its appearance under many disadvantages ... it was discovered, that a longer time than had been expected, either by their correspondents or themselves, was essential to the due arrangement of the proper materials ... The present Number, of consequence, consists, almost exclusively, of papers furnished by themselves ...

> The zeal and activity with which medical improvements are prosecuted in Europe, is fast spreading in America; and if, hitherto, our professors of the healing art have been behind other professional men in science and industry, it may safely be predicted, that this will not long continue their reproach. But various causes will probably, for some time, prevent them from appearing extensively as authors.

This Preface to the first volume of *The Medical Repository* refers to the problem that almost all medical journals were published in Europe: it was difficult for American doctors to get their observations and results published anywhere.

Furthermore, Smith and his colleagues proposed to base *The Medical Repository's* essays on clinical observations:

> After a continued struggle of many centuries ... it has at length become established as a fundamental truth, that though conjecture may precede experiment, facts are the only rational basis of theory. Philosophers ... are expected to proceed by a rigid examination and cautious assemblage of particulars to every general inference.

For many centuries, European journals had been mostly expansions of classical authors' theories, and were based rarely on scientific observation. *The Medical Repository*, by contrast, was to emphasize factual observation, not just theories and guesses. Smith felt that *The Medical Repository* would compete successfully with European medical journals.

The publication also made it possible for the first time for American doctors to buy an American medical book within the United States. Previously, all medical publications came from Europe and were extremely expensive.

> The art of book-making, as it is now practiced in Europe, and especially in Great Britain, with the increasing necessity for books, and the increasing charges upon them, must leave men of moderate fortune in absolute despair of forming any considerable library of medical work. The periodical publications alone, where a short paper is often expanded through twenty pages, when it might be compressed in half the number, amount to an expense that few are able to bear. The effect of this is to restrain the course of knowledge, and exclude the hope of improvement, except by the most tedious and imperfect processes. But, for this evil, a remedy will be provided in *The Medical Repository*.... and it is evident, that, with the power of selection, this publication may vie with any of the foreign journals. This will be better understood when it is observed, that from the mode of printing, a hundred pages of *The Repository* will comprehend not less than three hundred of any similar work in Great-Britain, and at one fourth of the expense.... The frequency of publication, likewise, will give *The Repository* a manifest superiority over most works of the same kind, in the opportunity it affords of speedily circulating new improvements and discoveries....[16]

The intention of the authors was to create a journal that would compete with any of the ones published by Europeans for less money, of better quality, and available to a wider range of physicians.

Aside from the reasons cited in the Circular Address and the Preface, it is quite possible that an underlying reason for *The Medical Repository's* publication was the publisher's desire to foster the independence of American medicine from its European traditions. The authors had lived during a period of great unrest, the American Revolution, and undoubtedly wished to aid the spirit of independence in any way possible. Elihu Hubbard Smith, in particular, had grown up in a patriotic town in which he was influenced by such great independence fighters as General George Washington and General Lafayette. Publishing this journal provided just one more way of breaking the new Republic from its dependence upon England for all its medical knowledge.

In 1798, after the publication of the first volume of *The Medical Repository,* Dr. Smith died prematurely at the age of 27. The following is an extract from his obituary as it appeared in the second volume of *The Medical Repository:*

> He died a victim to the late destructive epidemic. There were few who perished during the calamitous season, whose fate excited more universal regret, and whose memory will be more fondly and permanently cherished.... As a physician, his loss is irreparable. He had explored at his early age, an extent of medical learning, for which the longest lives are seldom found sufficient. His diligence and activity and his ardour and perseverance, knew no common bounds.... He had formed vast designs of medical improvement, which embraced the whole family of man kind, were animated by the sole of benevolence, and aspired after every object of liberal and dignified ambition.[17]

Articles by Smith in the second and third volumes of *The Medical Repository* were published posthumously. In all, a total of 23 annual volumes of *The Medical Repository* were published through the first quarter of the 19th century.

Although his life was short even by 18th-century standards, Dr. Elihu Hubbard Smith was able to accomplish more in his short life than most do in a much longer one. He was an independence fighter who was able to aid his country in its quest for recognition even if indirectly. He was an early contributor to American medical literature, publishing uniquely American observations. By publishing the first American medical journal, he set a path for American medicine to follow by encouraging prompt, timely communication among practitioners.

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Commentaries

The Patient-Physician Relationship: Covenant or Contract?

Many physicians are acutely aware of the external forces that are threatening the medical profession. Most of these forces are direct results of attempts to control health-care costs.

Although medical information science, quality improvement, and practice guidelines all have the potential to improve the quality of medical care, in practice, cost-containment strategies often ultimately degrade the patient-physician relationship. In some managed-care settings, the clinical encounter is deliberately "managed"; thus, the physician's interests are at odds with the patient's interests. Central to this notion is the destruction of the traditional patient-physician relationship in which the interests of the patients come first. For example, in some managed-care organizations, physicians are required to sign a loyalty oath and gag order. The loyalty is to the managed-care organization, and the gag order is for patients. These orders prohibit or limit clinically meaningful discussion with patients. When these rules are coupled with payment schemes that reimburse physicians to limit care, they dramatically undermine the trust between the patient and the physician.

Managed-care organizations should not be blamed for these cost-containment measures. After all, the directors of a for-profit corporation have a fiduciary duty to put the interests of shareholders over their own interests and the interests of their employees. The fiduciary relationship, between director and shareholder or between a trustee and a beneficiary, is held to extremely high ethical standards. Executives in managed-care corporations should not be criticized for putting the needs of their stockholders first. In fact, this fiduciary relationship should be supported and honored.

Physicians, however, should be faulted for submitting to external pressures and for betraying the trust granted to them by their patients. The relationship between the patient and the physician is based on the expectation that the physician will put the needs of the patient first—over and beyond the interests of the physician or any third party. This relationship is the foundation on which the practice of medicine is built and dates back to the era of Hippocrates and Asklepios in ancient Greece (1,500 B.C. to 500 B.C.).[1] The relationship between patient and physician should be held to a standard at least as high as the fiduciary relationship between director and shareholder.

Misplaced Priorities of Physicians.—Physicians have not always upheld their responsibility to put the needs of the patient first. The well-being of patients and the profession of medicine have suffered when physicians have put their own interests or the interests of a third party before the interests of their patients. Greed, prestige, and power have all succeeded at some time in displacing patients as the top priority of physicians. These lessons from history are relevant today.

When the pursuit of wealth or money becomes the first priority of physicians in a fee-for-service environment, patients may be subjected to unnecessary diagnostic tests or therapeutic interventions. In a capitated payment environment, concern about the protection of the physician's own livelihood can lead to withholding clinically needed care.

When the pursuit of fame or prestige becomes the first priority of physician-investigators, patients may undergo dangerous and life-threatening experimentation. The single-minded goal of scientific achievement, even without the temptations of fame or prestige, can be an equally false priority of physician-investigators. The history of medical research during the current century is riddled with examples of scientific misconduct and ethical lapses. The infamous Tuskegee syphilis study is but one example.

Patients, the medical profession, and society all suffer when the interests of a third party become the first priority of physicians. The third party can be the physician's employer, a political party, or the government. For example, physicians in the United States have done harmful experiments with radiation and toxic chemicals on unsuspecting persons for the benefit of the government.

Extreme Incident of Physician Abuse of Power.—The most horrific example of physicians' abandonment of patients is the central role of physicians in the Third Reich; after 1933 in Germany and 1938 in Austria, half of all physicians were members of the Nazi party.[2] Many of these physicians, often prominent in the academic community, were also leaders and perpetrators of eugenics, euthanasia, and mass murder programs; recall the image of the physician acting as gatekeeper and triage officer at the concentration camps. Although some physicians cried out against the pogroms, many were silent. Others capitalized on employ ment opportunities made available by the disappearance of Jewish physicians.[3]

Lessons for Today's Physicians.—Although no parallel exists between physicians' behavior in the Third Reich

and physicians' behavior today, important lessons can be learned by contemporary physicians. Dr. Jordan J. Cohen discussed the conference entitled "Hippocrates Betrayed: Medicine in the Third Reich" held on the 50th anniversary of the Nuremberg Doctor's Trial.[4] The conference "explored the antecedents of the contemporary relationship between physicians and the state through an historical analysis of the roots of Nazi medicine...." He declared that medicine can survive and flourish only if physicians exercise constant vigilance to ensure that medical science is used only for service to humanity. This vigilance must include resistance to the temptations of wealth, prestige, and power. Some of the excesses previously described may not have occurred if physicians had remembered their obligation to put patients first and if they had had the courage and strength to act on this principle.

Self-Examination.—In the spirit of such vigilance, I suggest that each physician examine his actions by addressing three questions.

1. *Are you a caregiver or a gatekeeper?* The caregiver provides care and concern to a person in need, healing if possible, helping always. To sick persons, the caregiver is "a guide through some of life's most difficult journeys."[5] In contrast, the gatekeeper minds the gate, letting some persons through and keeping others out. The function of the gate is to restrict access. The gatekeeper serves the interests of the owner of the gate not of the people trying to get through the gate. Physicians are just beginning to realize that the gatekeeper serves entirely at the whim of the owner of the gate.

2. *Which principle governs your relationship with the patient: Morality or the marketplace?* The term "morality" refers to the basic human concept of right and wrong. For physicians, morality means doing what is right for our patients and speaking or acting out against what is wrong. No such moral absolute can be found in the marketplace. The market is driven by revenue, profit margins, and market share. No patients exist in a market-driven practice of medicine—only consumers for whom the watchword is *caveat emptor.*

   A great danger to the practice of medicine is the transformation of physicians to interchangeable, dispensable workers accountable only to their employers and the financial performance of the institution that employs them. In this setting, physicians and health care are simply commodities—cold and without compassion. The greatest danger, however, is not loss of the physician's autonomy, degradation of the profession of medicine, or transformation of health care to a commodity. The greatest danger is the transformation of the patient to the status of commodity. The lessons from history are particularly instructive on this point.

   In the Hippocratic model of medicine, the patient represents a vulnerable person in need—the first and only priority of the physician. In the commercial model of medicine, the patient is at best a consumer; at worst, the patient is a source of revenue when well and a source of medical (financial) losses when sick. In a capitated, commercial system, physicians and managed-care organizations have every financial reason to shun sick people. In this system, physicians make economic (not clinical) decisions and provide medical explanations for those decisions. Patients are left to fend for themselves and to face the consequences alone.

3. *What is the relationship between you and your patient?* Is it a covenant or a contract? A group of clinical ethicists defined the practice of medicine as "a moral enterprise grounded in a covenant of trust."[6] Webster's Ninth New Collegiate Dictionary defines covenant as a "formal, solemn, and binding agreement." For a more complete understanding of the term "covenant," we must return to our professional ancestors in ancient Greece. During the time of Hippocrates, the Greek term for covenant (diatheke) was not used to describe a usual agreement or contract between two parties. The term "diatheke" was used almost exclusively to signify a very special relationship—a will and testament.

   A last will and testament involves parties who have a special and close relationship with each other; a contract involves strangers. A last will and testament is based on trust; a contract is based on mistrust. A last will and testament is a relationship between two unequal parties in which one party is concerned about the welfare of the other. A contract is between two equal parties, each concerned only with his own welfare. In its essence, a will and testament is a beneficent promise, a trust offered by one party to another. For physicians, this promise is to put the interests and needs of the patient first. The term "covenant" aptly describes the relationship between patient and physician. Physicians should have the conviction and courage to defend this covenant not only against external threats but also against internal threats of fear, ignorance, and complacency.

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Dehumanization Triumphant

Recent efforts to legalize physician-assisted suicide and to establish a constitutional "right to die" are deeply troubling events, morally dubious in themselves, extremely dangerous in their likely consequences. The legalization of physician-assisted suicide, ostensibly a measure enhancing the freedom of dying patients, is in fact a deadly license for physicians to prescribe death, free from outside scrutiny and immune from possible prosecution. The manufacture of a "right to die," ostensibly a gift to those not dying fast enough, is, in fact, the state's abdication of its duty to protect innocent life and its abandonment especially of the old, the weak, and the poor.

The legalization of physician-assisted suicide will pervert the medical profession by transforming the healer of human beings into a technical dispenser of death. For over two millennia the medical ethic, mindful that power to cure is also power to kill, has held as an inviolable rule, "Doctors must not kill." The venerable Hippocratic Oath clearly rules out physician-assisted suicide. Without this taboo, medicine ceases to be a trustworthy and ethical profession; without it, all of us will suffer—yes, more than we suffer now because some of us die too slowly.

The doctor-patient relationship will be damaged. The patient's trust in the doctor's devotion to the patient's best interests will be hard to sustain once doctors can legally prescribe death. Even conscientious physicians will have trouble caring wholeheartedly for patients once death becomes a "therapeutic option." The prohibition against killing patients, medicine's first principle of ethical self-restraint, recognizes that no physician devoted to the benefit of the sick can serve the patient by making him dead. The physician-suicide-assistant or physician-euthanizer is a deadly self-contradiction.

Physician-assisted suicide, once legal, will not stay confined to the terminally ill and mentally competent who freely and knowingly elect it for themselves. Requests will be engineered and choices manipulated by those who control the information, and, manipulation aside, many elderly and incurable people will experience a right to choose death *as their duty* to do so. Moreover, the vast majority of those who are said to "merit" "a humane and dignified death" do not fall in this category and cannot request it for themselves. Persons with mental illness or Alzheimer's disease, deformed infants, and retarded or dying children would thus be denied our new humane "aid-in-dying." But not to worry. The lawyers, encouraged by the cost-containers, will sue to rectify this inequity. Why, they will argue, should the comatose or the demented be denied a right to assisted suicide just because they cannot claim it for themselves? With court-appointed proxy consentors, we will quickly erase the distinction between the right to choose one's own death and the right to request someone else's.

The termination of lives someone else thinks are no longer worth living is now occurring on a large scale in Holland, where assisted suicide and euthanasia have been practiced by physicians for more than a decade, under "safeguards" more stringent than those enacted in the Oregon law. According to the Dutch government's own alarming figures, there are over one thousand cases per year of direct involuntary euthanasia; also 8,100 cases of morphine overdosage intending to terminate life, 61 percent without the patient's consent. Although the guidelines insist that choosing death must be informed and voluntary, over 40% of Dutch physicians have performed involuntary euthanasia. As the Dutch have shown, the practice of assisted suicide is in principle unregulable, because it is cloaked in the privacy of the doctor-patient relationship.

Legalizing assisted suicide would mark a drastic change in the social and political order. The state would be surrendering its monopoly on the legal use of lethal force, a monopoly it holds under the social contract, a monopoly it needs if it is to protect innocent life, its first responsibility. It should surprise no one if physicians, once they are exempted from the ban on the private use of lethal force, wind up killing without restraint. Here, by the way, is a *genuine* violation of the Fourteenth Amendment: deprivation of *life* without due process of law.

We must care for the dying, not make them dead. By accepting mortality yet knowing that we will not kill, doctors can focus on enhancing the lives of those who are dying, with relief of pain and discomfort, moral and social support, and, when appropriate, the removal of technical interventions that are merely useless or degrading additions to the burdens of dying—including, frequently, hospitalization itself. Doctors must not intentionally kill, or help to kill, but they may allow a patient to die.

Ceasing medical intervention, allowing nature to take its course, differs fundamentally from assisting suicide and active euthanasia. Not the physician, but the underlying fatal illness becomes the true cause of death. More important morally, in ceasing treatment the physician *does not intend the death* of the patient, even if death follows as a result. Rather, he seeks to avoid useless and degrading medical additions to the already sad end of a life. In contrast, in assisted suicide the physician necessarily intends primarily that the patient be made dead.

One cannot exaggerate the importance of the distinction between withholding or withdrawing treatment and directly killing, a distinction foolishly dismissed in the recent Court of Appeals' decisions. Both as a matter of law and as a matter of medical ethics, the right to refuse unwanted medical intervention is properly seen not as part of a right to become dead but rather as part of a *right protecting how we choose to live*, even while we are dying.

Once we refuse the technical fix, physicians and the rest of us can also rise to the occasion: we can learn to act humanly in the presence of finitude. Far more than adequate morphine and the removal of burdensome chemotherapy, the dying need our presence and our encouragement. Withdrawal of human contact, affection, and care is the greatest single cause of the dehumanization of dying. People who care for autonomy and dignity should try to correct this dehumanization of the end of life, instead of giving dehumanization its final triumph by welcoming the desperate good-bye-to-all-that contained in one final plea for poison. Not the alleged humaneness of an elixir of death, but the humanness of connected living-while-dying is what medicine—and the rest of us—most owe the dying. The treatment of choice is and always will be company and care.

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The Future of Psychiatric Administration

I am very honored by being asked to speak to you. I hope that I can bring a slightly different twist to the topic, not because I am more perspicacious than others, but by rather force of circumstance. Let me explain.

I started out in medicine some 30 years ago and had a successful career as a thoracic and cardiovascular surgeon. I entered medicine with a vision—an introject, which led me to see myself as a "healer." I believed then, and I still believe, there is something sacred about our profession, that like St. Luke or Maimonides, Salk or Freud, we have a special role in society. While I would hardly liken myself to such greats, I still take them as my ideal. Several years ago, due to health reasons, I had to stop doing surgery and after a brief hiatus entered the field of psychiatry. I saw in psychiatry a truly sacred calling. Having helped to heal the body for many years, it was an even greater privilege to bring those years of experience to help others to a yet higher level. Moreover, psychiatry for me was an intellectual pathway to growth— in helping others I also helped myself.

Change of scene: Recently I had the pleasure of caring for an elderly gentleman with a life-long history of depression, two divorces, and financial failure. To give you one insight into this man, he used to sell second-hand cars, and, after completing a deal, would wash his hands some 29 times before taking on the next customer. Well, we worked together for 15 months—initially weekly, and then monthly. He was able with medication and therapy to work through a host of issues and come to a point where he felt at peace with himself and the world. He accepted his financial limitations and reconciled himself with his two marriages and the children from both. He actually began to enjoy his life. Not every patient I have worked with does so well—I only wish that were the case. But here's the rub. My patient was admitted to a local hospital with a large pleural effusion that turned out to be malignant. He now had to face the reality of death. I called the HMO for permission to see him in the hospital and was told that it would not be approved. After all, I was told, there were social workers in the hospital who could deal with his emotional problems related to terminal cancer. Here I was given a choice. I think I did *what my heroes would have done*—I went to see him anyway, and, as you can imagine, it was for him a powerful therapeutic. I never told him that I wouldn't be paid, for a dying man shouldn't have to deal with avoidable anger. Now I tell this true story, not to demonstrate to you how fine a person I am; I have all the frailties that any of you have: I was pissed! It took two hours of my time, unreimbursed, plus another 30 minutes talking to the HMO. I felt exploited and abused by the system. But I had to live with myself. I tell you this story because it represents a choice of you will have to make many times in the future.

We live in scary times. I was talking recently with some of our psychiatric residents and they complained about the lack of respect they received from physicians, friends, and family. There were many reasons for this; I will mention but one or two. Surely their question reflected a certain lack of respect for themselves, for what they were doing.

And why should that be? Well I think it is because each of us faces uncertainty and uncertainty leads to fear. Almost every young psychiatrist faces three major problems:

1. a change in his identity
2. a change in policies he must work and live under
3. a change in his financial security.

Let me state from the start that the changes in the provision of health care being forced on us are not all bad. It is a good thing to be compelled to examine what we have been doing for the past 50 years. I recently read an article by Dr. Brill who, while observing that various forms of psychotherapy had existed throughout history, said that before 1900 there were no physicians who specialized in mental therapy, and that, indeed, the word *psychotherapy* is not found in any of the "psychiatric" works of the last century. The mentally ill who could not function on the outside were simply hospitalized— a method of therapy that goes back to ancient times. There were, of course, individuals who dealt with mental health problems on an outpatient basis, and they were called "alienists." They were not highly respected. Here are a few figures that you may find surprising. Between 1920 and 1940 membership in the APA increased from 937 to 4,010,and membership in the American Psychological Association increased from 393 to 4,472. In 1993 the APA had reached the 38,000 member mark and in 1986 there were 235,500 psychologists employed in the United States. This rapid growth of our specialty, the advent of effective drug therapy, and the escalating costs of treatment must raise questions as to what is happening to our society, and what our changing roles should be. Rapid change brings stresses that require examination. I have no problem with this, but I do have a problem with those who are doing the examining.

Let me switch here to another concept. We have an organizational structure in the HMOs which is like a three legged stool. There are the managers who in the name of efficiency are milking the system for financial gain. That is one leg. We have the physicians who care for patients, and that is the second leg. The third leg is the patient. There will always be people who require our help; they have always been with us and they are not about to disappear.

Let me make another point. I have practiced medicine for many years and I can say that, with few exceptions, most physicians I have known want the best for their patients. Yes, we want to be paid; that is a matter of justice, and we must earn a living. But for us the craft and art always come first. Most administrators have no idea how much doctors give of themselves during their training and years in practice, because the nature of administration, how business schools train them, is to give the least and get the most. Who of us have not fed a sick patient, washed floors in the OR, or transported a patient to the operating room. How is one paid for the pain of telling a mother that her child is dead? It was our privilege to give, and few of us have learned to hold back. Another point to keep in mind: The HMO approach is not going to cost the public any less. The latest estimates I have seen is that the administrative overhead is in the range of 30%. What has happened is that the administrators have dipped their hands into our pockets and the pockets of our patients. The idea that health care should be traded on the stock market like guns and oil, is, if one thinks about it, an atrocity.

I have mentioned efficiency. Being for efficiency is like being for apple pie. But there is a downside to efficiency carried to far. Obviously, we cannot oppose doing things in better ways, and where the HMO can show a better way we should listen. But the HMO is not a healer, it is business, and one must be wary of accepting their judgments. Let us take a moment to look at the other side of efficiency. I see three potential dangers with efficiency: 1) it tends to make us the mere producer of impersonal goods. We will become sweat-shop doctors, easily exploited. Internists and family practitioners are being trained even in medical schools to see four patients an hour; it is but a matter of time before this will be raised to five. As soon as we are no longer useful or cost too much, we will be got rid of. Efficiency forgets that we are, after all, more than machines and tools; 2) efficiency becomes a sort of false god, an end in itself, as if being efficient were our primary vocation. Everything then is sacrificed to efficiency, shifting our center of gravity away from our moral centers, from what we are as individuals; 3) lastly, there is the idolatry of work, especially professional work, making of our work the only serious part of our lives. It can lead us to see our only worth in work, leading or dragging us away from our primary calling of being human beings. When a person judges himself to be worth only as much as his performance is worth, social disparities necessarily become unbridgeable abysses. Worst of all we become slaves to production rather than growing as artists and scientists.

And so we have a disaster in the making. The HMOs will not work unless we make them work, which means we must retain our role as healers. If the administrators do not allow us this role, the HMOs will fall apart, and when they do, we will be blamed and scapegoated. Medicine has not always been a financially rewarding profession. I grew up in the Depression and would like to tell you about Dr. Kelly who lived in our small town. He was an internist, graduated from Harvard Medical School, and he had five children. He would come home from the hospital to find his living room full of patients with no insurance and no money. He would rush through the living room, eat his dinner, and then after dinner would take the patients into

his study and see them one by one. He was paid in chickens and eggs—perhaps a ham at Easter. He is long dead, but he is still remembered with love. May we be so fortunate.

Let me tell with you a personal story. When I started in private practice as a chest surgeon I faced the problem of no income for several months; the specialty involves major surgery with large bills such as patients cannot pay up front. But I had a family of six children to feed. I used to go out at 5 A.M. and lobster in the Sound every morning before going to the hospital. I started in practice in July, and I well remember sitting down to Sunday dinner in September and my children saying, "No, dad, not lobster again!"

I recognize that many of you are deep in debt and debt may force us to compromise, to accept less than ideal situations in order to survive. But if excessive debt can enslave us, a vision of a just relationship between altruism and money can give us freedom. Despite all the administrative rulings, despite all the algorithms, physicians still make the life-and-death decisions for their patients. At the end the responsibility is always ours. I have said that we must grow as artists and scientists. There is a medieval saying, *ars sine scientia nihil est,* art without science is nothing. The reverse is also true. The application of our science is an art, and we are craftsman. Now a craftsman is always worthy of his hire. It is a matter of justice that we should be paid—and even paid as well as the administrators. But we must never let money become the bottom line. If medicine is to remain a vocation, it can never be driven by the profit motive.

You are the future of psychiatry, and as the more thinking members of the medical community, greater burdens lie on your shoulders than perhaps you realize. You have come here or been sent here to see how you can combine your primary vocation to be psychiatrists with the administrative roles you must assume. At this point, I recognize that you will face the paying of debts, of working with the HMOs as they exist, of establishing your home and families, and some of the long-term, deeper issues may seem of less immediate concern. It was that way when I finished my training in surgery. But the privilege of a reasonably secure future has not been given to you. You face a different future.

You must not only do the things I had to do, you must prepare for the future, not just of psychiatry, but perhaps all of medicine. Our schools are doing their best to turn out physicians who will function in an HMO setting, four patients an hour, sweat-shop medicine. Your job, beyond and above the usual pattern is to save medicine. I know this sounds grandiose, but let's sit with it for a moment. You are the healers of the future, or if not, then the sweat-shop workers of the future. You not only have to convey to those below you the need to be real healers, you must also insist on fulfilling that primary role or combining that primary role with your new administrative functions. I am not promising you a rose garden, but rather a challenge. I do not know how this will work out for any of us, but if we abandon our role as healers, then we might all of us just as well become stock brokers. How then do we continue to be healers? I do not have all the answers—but the first level is clear to me. We must be bloody good psychiatrists! Whether we are to pick up the pieces when the HMOs fall apart, or whether we work with the HMOs so as to prevent them from falling apart, we must know what we are doing. Whatever role we fill, we must above all be COMPETENT as psychiatrists. If we are competent we will slowly take over the administrators for the benefit of our patients and our souls.

Next we must retain our image of ourselves as healers and pass it on to the next generation. The battle is not only ours, it is the battle of those working with us. We must in our own way, always insist on the primacy of patient care. We can insist on just relationships among ourselves and the HMO. We must develop new ways of effective administrative leadership. We must learn to bring our role as competent healers to psychiatry so as successfully to influence policies and procedures. We cannot afford to give up the fight, because if we do, not only will our children suffer, but we will deserve the blame poured upon us. I envy your youth; I am convinced that you can do it all successfully.

Rama P. Coomaraswamy, M.D.
Assistant Professor of Psychiatry,
Albert Einstein College of Medicine

Footnote: this was an address given to the Psychiatric Conferance at Tarrytown, New York, on (date), held under the auspices of the Albert Einstein College of Medicine. Dr. Coomaraswamy is a psychiatrist in Greenwich, Conn.

50 Years Ago
From *The Connecticut State Medical Journal*
October 1946

Yale Medical Library Exhibits

The History of Antibiosis

During the month of September the Yale Medical Library arranged a special exhibit illustrating the history of microbial antagonism for the purpose of elucidating the backgrounds of our knowledge of penicillin, streptomycin, and other antibiotic agents. The exhibit was timed to coincide with the meeting of the Connecticut Clinical Congress held at the Yale School of Medicine on September 10, 11 and 12, 1946, and the subject was selected out of deference to Sir Howard Florey who appeared on the program on Wednesday, the 11th. Sir Howard, after presenting an interesting film portraying the first war casualties to be treated with penicillin (in the North African Campaign of 1943), gave a brief general account of the history of antibiosis.

The exhibit at the Yale Medical Library began with the works of Pasteur, and the explanatory notice in the first display case made reference to a recent gift to the Library of a collection of Pasteur's early writings from Dr. Stanhope Bayne-Jones, one of the Library's Advisory Board members who served for nearly four years as director of the U. S. Typhus Commission and who is now in residence at the Library preparing (for the War Department) the official history of the Commission.

Pasteur's many contributions to bacteriology were represented in the exhibit by his monographs on: lactic acid fermentation (1857); wine (1866); vinegar (1868); the silkworm (1870); beer (1876); fermentation (1879); and rabies (1885). In the midst of these monographs he issued in 1877 his celebrated paper with Joubert reporting that any aerobe contaminating a culture of anthrax would arrest the growth of the anthrax organisms. The remarkable passage outlining this disclosure may be quoted since it envisages the therapeutic possibilities of applying antibiotic principles, and it also clearly foreshadows the discovery of the therapeutic uses of penicillin introduced by Sir Howard Florey and his collaborators in 1940.

"Neutral or slightly alkaline urine is an excellent medium for the bacteria. If the urine is sterile and the culture pure the bacteria multiply so fast that in the course of a few hours their filaments fill the fluid with a downy felt. But if, when the urine is inoculated with these bacteria, an aerobic organism, for example one of the "common bacteria," is sown at the same time, the anthrax bacterium makes little or no growth and sooner or later dies out altogether. It is a remarkable thing that the same phenomenon is seen in the body even of those animals most susceptible to anthrax, leading to the astonishing result that anthrax bacteria can be introduced in profusion into an animal, which yet does not develop the disease; it is only necessary to add some "common bacteria" at the same time to the liquid containing the suspension of anthrax bacteria. These facts perhaps justify the highest hopes for therapeutics."

Of the many other forerunners of the penicillin discovery, Doehle's thesis published at Kiel in 1885 (which carries the first illustration of an antibiotic effect), was also on display, along with the papers of Bouchard (1889), Emmerich and Low (1899), and Frost (1904), and the more recent workers in the field, Gratia, Dubos, and Fleming. Reprints of Florey's original papers on penicillin, which have been carefully preserved in the Historical Library among the classics in the history of medicine, were also displayed and were followed by early American reports on penicillin. A final exhibit case was devoted to Waksman's work on streptomycin.

History of Surgical Anesthesia

During the month of October, in observance of the centennial of the introduction of surgical anesthesia, the Historical Library at the Yale School of Medicine is

Reprinted from the *Connecticut State Medical Journal*, October 1946.

arranging a detailed exhibit illustrating the general history of anesthesia. A similar exhibit had been placed on display in December 1944 to commemorate the centenary of Horace Wells' introduction of nitrous oxide for painless extractions of teeth. In the interval between the two exhibits the Library has been collecting all available source material bearing on the history of anesthesia, and it has been fortunate in being able to fill gaps among the ephemeral pamphlets bearing on the ether controversy and particularly upon the claims of Horace Wells, William T. G. Morton, and Charles T. Jackson.

As a tribute in the centennial year the Library has issued a reprint of W.T.G. Morton's letter of July 1847 to the Academy of Sciences at Paris, describing the historical sequence of events that led up to the first public demonstration of ether in October 1846. This appears to be much the best of Morton's statements concerning the discovery, being both accurate in detail and generous as far as the other claimants are concerned.

The Library has also published an annotated catalogue of its anesthesia holdings* in which a schedule for library classification of the anesthesia literature has been developed. The catalogue has been attractively printed by the Southworth-Anthoensen Press of Portland, Maine, and is being formally published by Schuman's in New York as No. 15 in the Library's monograph series. The passage introducing the writings of Horace Wells will be of especial interest to our readers within the state:

"The claims of Horace Wells of Hartford, Connecticut, to priority as the discoverer of anesthesia are most impressive, not alone because of the dignified way in which they were set forth (both by Wells himself and by his supporters such as the Hon. Truman Smith), but because they leave little doubt that Wells had grasped the concept of inhalation anesthesia by December 1844 and perhaps even earlier, and that during 1845 he gave both ether (once) and nitrous oxide many times for tooth extraction. There seems to be no question that Wells had passed such information as he had on to W. T. G. Morton with whom he had a brief partnership. In addition to this, Wells made a serious attempt to convince the world that he had made a discovery; and had the world listened, his claim over Morton would certainly be valid. Some feel that even so it is valid. ..."

The introduction to the catalogue gives a brief resume of the contributions of each one of the anesthesia claimants; it ends with a thought that will be of interest to medical students:

"The most outstanding fact about this discovery of a hundred years ago is that it represented a glorious triumph of youth, for the real innovators in the story of anesthesia were all young, several of them very young, at the time they did their most original work—a fact which medical students should never forget. Davy was scarcely 21 when he carried out his studies on nitrous oxide, and Barton was also 21 when he made his. Hickman was 20 when admitted to the Royal College of Surgeons and 24 when he carried out his celebrated experiments on carbon dioxide. Faraday was 26 when he published his note on ether inhalation. Horace Wells was 23 when he wrote his book on teeth and 29 when he used (on himself) nitrous oxide for an extraction. Morton and Long were each 27 when they first used ether, and Bigelow 28 when he made the announcement to the world. Even Jackson and Simpson, the eldest two of the group, were only 36 when they first experimented with ether and chloroform.

"But while youth has the courage to break with tradition and to blaze new trails, it lacks the seasoned judgment of maturer years, is easily influenced, and is often intolerant and defensive in its reactions. Indeed, one might find excuse for all the initial bitterness of the ether controversy by taking the wider view that the claimants, being young, eventually came to defend, not so much their priority in a great discovery, as their own personal integrity, for they frequently impugned one another's honesty. But whatever view one takes of the discovery of surgical anesthesia, one must never lose sight of the fact that these young men by their imagination and their daring made a contribution that places the world forever in their debt."

*Fulton JF and Stanton ME: *The centennial of surgical anesthesia.* An annotated catalogue of books and pamphlets bearing on the early history of surgical anesthesia. New York, Schuman's, 1946.

Hartford Hospital Loses Intern by Death

Anterior polomyelitis of the bulbar type on September 10 [1946] claimed the life of Oliver W. Means, M.D., one of the present group of interns at the Hartford Hospital. Death followed an illness of only four days. Dr. Means was a young man of promise and his sudden death came as a disturbing shock to his many friends in the Hartford Hospital, attending physicians, house staff and patients.

Oliver Means, a Hartford boy, was edcuated at Kingswood School. It was while there that he was instrumental as editor of the Wyvern, the school literary paper, in enabling that publication to win second place in the Columbia Scholastic Press Association competition in 1934. From Kingwood he went to Yale, receiving the degree of B.S. in 1938 and of M.S. in 1941. His medical education was obtained at the College of Physicians and Surgeons, Columbia University, from which he was graduated this year. He came to Hartford Hospital with the last group of interns on July 1.

THE PRESIDENT'S PAGE

Hares and Hounds

There will always be conflicts among physicians' groups. Nowhere better is this exemplified than in last year's difference of opinion between the Connecticut Academy of Family Practice, the Connecticut Society of Internal Medicine, and the Connecticut College of Obstetrics and Gynecology (CCOG).

The difference concerned a proposed Connecticut law, supported by CCOG, recognizing the ob/gyn specialists as primary-care physicians. The family practice and internal medicine physicians were opposed to the primary-care designation. Unfortunately, the difference reached a strident pitch at the state Capitol with physicians from both sides castigating their opposing colleagues during legislative testimony and lobbying efforts. All the legislators could hear on the physician channel was static, which is precisely what the opponents of organized medicine wished.

The position of the Connecticut State Medical Society (CSMS) on this issue was ground-breaking. We were all used to rallying behind our colleagues on issues specific to one specialty, but never before in the recent past had there been such a strong issue thath pitted one group of physicians against another at the state legislature. We did attempt to negotiate a settlement within the house of medicine, but were not able to reach agreement between the sides. When it was clear that the issue was to go forth, the CSMS agreed to stay neutral, but took one very strong position—CSMS would not allow any legislation to go as far as to affect the current medical practice act. In other words, we would fight any legislative attempt to begin licensing physicians by specialty. We made this clear and then asked each side to treat the other with respect at the Capitol.

We hope both sides are content with the outcome of that battle. Although there were battle wounds, we all learned something from the experience. Obviously, if in the future there are conflicting issues within the house of medicine between different groups of physicians, CSMS cannot take a position favoring either side. It is up to the specialty societies to advocate for their members. However, the role of the Connecticut State Medical Society may be extremely important and constructive in such conflicts. The CSMS can mediate differences between physician specialty groups behind closed doors in an attempt to reach a consensus. Even if consensus cannot be reached, the process of mediating between two specialty groups of medicine can be mutually beneficial, insuring the integrity of all physicians is maintained. Fractious bickering can be discouraged. Issues of mutual interest can be identified. Good sound political advice can be dispensed so that medicine, as a whole, does not feel a political backlash.

The scenario of conflicts between specialty societies is not new, but it is one which the CSMS can help as an impartial arbiter, without "taking sides." After all, one cannot run with the hare and hunt with the hound. The CSMS stands ready to assist physician groups as a mediator to help reach a compromise, but mediation must come before the crisis begins.

The CSMS has also recognized that we have a role to play in this changing landscape even without a crisis. While we are attempting to reorganized our House of Delegates to reflect the growing specialty society affiliations, we have already addressed the issue within our Committee on Legislation. Under the leadership of David Parke, M.D., the committee has extended an invitation to all of the specialty societies to send a representative to committee meetings. These meetings offer an opportunity to discuss mutual and specific agendas. We hope better to coordinate the legislative activities of organized medicine by at the very least sharing our agendas and contributing to each other's strategies. CSMS can offer and receive advice and resources, and we can coordinate legislative activities so that all can work together and make medicine's presence at the Capitol the strongest possible.

Michael M. Deren, M.D.
President

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Neurasthenia, Psychasthenia, CFS, and Related Matters

ROBERT U. MASSEY, M.D.

LAST month the Hartford *Courant* in its Health Science section attempted to define Chronic Fatigue Syndrome, and estimated that in the United States there were "between 200,000 and 500,000 adults" with CFS. Garret Condon, the staff writer, noted that "advocacy groups suggest the number may be higher." Any allusion to advocacy groups means the condition is a politically sensitive disorder along with breast cancer, Lyme disease, and AIDS. I recall enraging a segment of the Lyme advocacy crowd many years ago by innocently suggesting that fatigue, depression, muscle aches and pains, and headache are not always, or even usually, the result of infection by the spirochete *Borrelia burgdorferi.*

The symptoms of CFS were well known more than 50 years ago and not infrequently ascribed to undulant fever, periodontal disease, chronic sinusitis, chronic prostatitis, chronic tonsillitis, adenoids, or hypothyroidism. Treatment varied from multiple vitamins, elixer of thiamine and phenobarbital, small doses of thyroid, *E. coli* vaccine, to more drastic measures such as prostatic message, dental extractions, sinus drainage, cholecystectomy, and appendectomy. One could distinguish hypothyroidism from focus of infection as a cause of fatigue by finding a BMR less than minus 10 or an erythrocyte sedimentation rate higher than 15. A poorly transluminated maxillary sinus or a boggy prostate was the tip-off. Occasionally a combination of dextroamphetamine and barbiturate was prescribed to treat both the anxiety and depression. In young males masturbation was often strongly suspected but, of course, rarely mentioned, and then only if there was fear of impending insanity.

In William Osler's first edition of *The Principles and Practice of Medicine*, 1893, Neurasthenia, which I take to be a proxy for CFS, is described as either hereditary or acquired. Osler wrote:

> *Hereditary.*—We do not all start in life with the same amount of nerve capital.... [but for some] there is no reserve, and in the emergencies which constantly arise in the exigencies of modern life these small capitalists go under and come to us bankrupt.
>
> *Acquired,*—The functions ... may be damaged by exercise which is excessive in proportion to the strength—i.e., by strain. ... in many persons the strain ... is first manifest by worry. The individual loses the distinction between essentials and non-essentials, trifles cause annoyance, and the entire organism reacts with unnecessary readiness to slight stimuli, and is in a state which the older writers called irritable weakness.

He then noted the existence of several forms: cerebral or spinal being the commonest; others cardiovascular, gastric, and sexual. "The physical debility may reach a high grade and the patient may be confined to bed." Osler has nothing to say about treatment and ends his description after two and a half pages.

By 1927, a third of a century later, in the 10th edition of *The Principles and Practice*, Thomas McCrae expanded the section on Neurasthenia, which he also named Psychasthesia, to eight pages, describing it as "an ill-defined, motley group of symptoms , which may be either general and the expression of derangement of the entire system, or local and limited to certain organs." Tongue in cheek he writes, "As Van Gieson sonorously puts it, 'the potential energies of the higher constellations of their association centres have been squandered by their ancestors.'" Treatment he subdivided into prophylaxis, personal hygiene, hydrotherapy, and psychotherapy, by which he meant chiefly "suggestion" and "faith," occasionally "psycho-analysis," and rarely "hypnosis." I wish I had space to reproduce his rich and wise advice for the physician in helping his patients devise a "daily programme" of mental and physical hygiene. This would never survive managed care! The reader senses McCrae's longing for a return of the "Æsculapian cult, the most elaborate and beautiful system of faith healing the world has ever seen."

It is remarkable how like this advice is to the advice of Osler's "beloved" Robert Burton in his *Anatomy of Melancholy* (1621): "A third thing to be required in a patient is confidence, to be of good cheer, and to have sure hope that his physician can help him." His descriptions are legion; here is but one:

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

> ... the whole malady proceeds from that inflammation, putridity, black smoky vapours, etc.; from thence come care, sorrow, and anxiety, obfuscation of spirits, agony, desperation, and the like.... [He goes on to define it] with Areteus to be *angorem animi,* a vexation of the mind, a sudden sorrow from a small, light, or no occasion, with a kind of still dotage and grief of some part or other, head, heart, breasts, sides, back, belly, etc., with much solitariness, weeping, distraction, etc., from which they are sometimes suddenly delivered... (Pt 1, Sec. 3, Mem. 2, Subs 4.)

In my copy of *Principles and Practice,* the one I used in medical school, the 15th edition (1944), Henry Christian has moved Neurasthenia: Anxiety neurosis: Psychasthenia: Psychoneurosis up front to page 3, the first condition discussed in the textbook. Not surprizingly it is almost word-for-word the same as the 1927 text of McCrae, including treatment. Both McCrae and Christian emphasize "the active belief in the assurance of the physician that health is within reach."

By the 18th edition (1972) neurasthenia has disappeared, replaced by "Physical illness or symptoms directly related to psychologic illness." Psychosomatic medicine had reached and perhaps just passed its heyday.

T.S. Eliot wrote, I believe in his Ph.D. thesis, "Reality is a convention." And again, as I recall it, "all theories are true from some point of view." Other names for this syndrome, which has occasionally been perceived as occurring in epidemic form, is postviral fatigue syndrome, or PVFS, and chronic Epstein-Barr virus (EBV) syndrome. We've all seen it, and perhaps all suffered from it, more or less, from time to time (as Burton wrote "it comes and goes by fits"). A 1934 outbreak in California was attributed to a nonparalytic form of poliomyelitis. In 1971 the disease appeared at the Hospital for Sick Children in London, and was called "epidemic neuromyasthenia." I knew a brilliant physician who was certain she had it, and could date its onset precisely; she subsequently died of metastatic melanoma. It has been attributed to various viruses other than EBV, including human herpes virus 6 and T lymphotropic viruses 1 and 2. I suspect that in the 19th century it was not infrequently confused with consumption, or coexisted with it. David E. Rogers in 1993 had "no trouble believing that the cause of this syndrome will be identified as a microbial agent...."

Recovery, unless there is underlying mortal disease, seems assured, just as Burton, Osler, McCrae, and Christian wrote. As much as I dispise disagreeing with one of my literary heroes, I do not believe reality is a convention, but I do believe we have difficulty with naming things in the real world because we must somehow get them into words, and words, imperfect symbols that they are, take on new and often strange meanings as the culture changes. I think all of these names, neurasthenia, psychasthenia, chronic fatigue syndrome, lassitude and asthenia (Harrison's *Principles of Internal Medicine,* 7th ed.) refer to a reality that we all recognize, and never, especially when it occurs in us or in one of our family, would think of it being "just in our heads," whatever in the world that means.

Osler was smart in saying nothing about treatment, but leaving it up entirely to our common sense as physicians, and the caring support of friends and loving families. He was wise also, because by leaving out all mention of therapy, he was hinting that we should not take it, or ourselves, too seriously. And from all the anecdotes about WO, I'll bet he laughed and joked with his patients, especially the young ones, and together in great good humor and high cheer they found their way out of it, just as his beloved Robert Burton, Democritus Junior, the laughing philosopher would have done for his parishioners as vicar of St. Thomas at Oxford.

This Month's Reading in Review

TIMOTHY B. NORBECK

In a special issue of *Time* magazine, former Surgeon General C. Everett Koop stresses the importance of maintaining the integrity of the patient-physician relationship in a health-care market dominated by managed-care companies which "seem to be interested firstly in managing costs and secondarily in maintaining health."

In his essay, Koop writes that "HMOs cannot assure us that physicians will, in every instance, put their patients' interests first...." He also notes, "Whatever its flaws, traditional fee-for-service medicine always allowed physicians to act as advocates for their patients."

Time (September 1996)

Believe It or Not: An August Gallup Poll shows that Argentines have more faith in their media (51%) than even their churches (50%).... As one might expect, a similar poll in the U.S. in June showed just the opposite—with 57% trusting their churches or synagogues and only 32% having faith in their newspapers and 36% in TV news.

USA Today (13 September 1996)

Gunshot violence costs the U.S. $20 billion annually, a fifth of it in medical expenses, and 80% of gunshot victims lack private health coverage.... While gunshot wounds account for fewer than 1% of hospital injuries nationwide, they generate 9% of injury treatment costs.... Moreover, the high amount of uncompensated care provided to gunshot victims was a major factor in the closings of more than 60 urban trauma centers in the past 10 years.

U.S. News & World Report (1 July 1996)

"Outside of their profession, lawyers have become symbols of everything crass and dishonorable in American life; within it, they have become increasingly combative and uncivil toward each other—Of course, it is also true that while Americans revile lawyers, they have a hand in this mess because they have turned virtually every kind of unhappiness into a legal claim."

John Marks in *Forbes* (9 September 1996)

Chocolate may produce some of the same effects in the brain as marijuana, according to a study released in August.... Components in chocolate appear to mimic the chemical THC, the active ingredient in marijuana, by attaching to the same receptors in the brain.... Chocolate's effect, however, is extremely mild.... The National Institute of Mental Health estimated a 130-pound person would need 25 pounds of chocolate to produce a sensation similar to marijuana's.

Nature (22 August 1996)

Researchers have found that grapefruit juice helps the body absorb 13 drugs more effectively.... The citrus juice can help patients who take calcium channel blockers for high blood pressure triple their blood levels of the drug.... It reacts similarly with the antihistamine Seldane and the sleeping pill Halcion.... It can, however, lead to inadvertent overdoses due to increased drug content in the blood.

AP/*Baltimore Sun* (29 August 1996)

Early surgery for men who have prostate cancer can extend life by at least 10 years, according to a University of Chicago study.... The study found that surgery may not be the best option for all patients, but the findings can provide men with the necessary information to decide which treatment is best for them.

USA Today (28 August 1996)

In 1995, more than one third of all 12th graders reported smoking in the past month, and daily smoking among 12th graders was up to 21.6%.

Health and Human Services Release
(23 August 1996)

Only in America: The Skinners of Newport News, Virginia, filed a $35 million lawsuit in July in connection with the 1994 unfortunate death of their son, 16, who was riding in a car that drove off a road and plunged into a lake. Among the defendants: Kmart, which sold a computer-cleaning product to the car's driver, which he and the Skinner boy had used to get high by "huffing"; two engineering consultant firms that designed the lake the car fell into; and the company that designed the road the car was traveling on because it should have been further away from the lake.

Washington City Paper (6 September 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

M.D. Health Plan has been through many changes in the past year. The merger with Health Systems International has allowed us many new and exciting opportunities, including a Personal Medical Management System:

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We know that the relationship between physician and patient is the most important. As an HMO, our responsibility is to be a resource to those relationships, working closely with our physicians to assist in the direction of patient care in the most efficient way possible while focusing on high quality. Outcome is still the best measure of our success, not the bottom dollar. Just doing the right thing will always be the most cost effective.

It's also important to know that the CSMS–IPA remains *separate* from the HMO and is owned by the Connecticut State Medical Society.

M.D. HEALTH PLAN

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Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

What Will HMOs Have in Store Next for Medical Care?

Letter to the Editor of The Stamford Advocate: What next? Drive-through hysterectomies? First it was drive-through deliveries and now drive-through mastectomies.

It is flattering to think that the middle-aged men sitting in oak-paneled board rooms who make these decisions acknowledge that women are biologically the superior sex, but we are still made of flesh and blood and not some exotic metal from Mars, or is it Venus? What do these men know about the psychological and physical pain a woman goes through—first being told she has cancer and then the devastating experience of losing a breast. The almighty dollar seems to win over human life.

Not too long ago a 38-year-old patient of mine with young children died of breast cancer. When she had to have radiation following a mastectomy, her HMO insisted she go to a facility 30 miles away as the local center was nonparticipating one. This women had to go by bus because she did not have a car. She was holding down a full-time job and looking after her family and often didn't have the energy to take the long trip, so she missed many of her treatments. She may not have lived even if she had taken all of the treatments, but the irony of the situation was that as this woman struggled hard in a losing battle the CEO of the HMO scurried home with $18 million.

It is hoped that our legislators will see to it that the profit margins of HMOs do not override good patient care. When physicians have a question about a medical issue, they should be able to speak directly to a practicing physician (not one who has been an administrator for 20 years). Too much time already has been wasted arguing with high-school dropouts with check lists.

I suppose it shouldn't be surprising that so far all these "drive-thrus" have been women's issues. I can see the flurry of top-level meetings behind closed doors if the subject of "drive-through prostatectomies" ever came up.

Lalitha Manoharan, M.D.

Stamford

Published in *The Advocate,* 5 September 1996, Stamford.

Cloth Listeners

Letter to the Editor: Last December while I was a patient (health consumer) in one of Connecticut's major teaching hospitals I had the opportunity to make several observations that I would like to share with you and your readers.

Contrary to the days of my youth as a rotating intern and surgical resident, the people in hospitals today who carry and use stethoscopes are primarily nurses, followed by attendings (medical and surgical), and medical house officers. The nurse who, in my opinion, uses the stethoscope the most carries it draped like a scarf around the neck, almost as a badge of office. Colors and styles vary. Attendings usually carry them, somber black in color, concealed in coat pockets or leather toilet accessory type bags. The medical house officers mostly stuff them into their white jacket pockets, though some wear them scarf-like in the nurse manner or clamped to the neck dangling "at the ready." The surgical house officers, by and large, borrow them from the nurses.

I am impressed with the frequency that nurses listen to chests, specially postoperative chests. I remember when nurses where only "allowed" to use a stethoscope to listen to apical pulse rates, take blood pressures, and sometimes listen to fetal hearts.

I now come to the point of my letter. My observations conclude that at least 75% of the nurses listened to my chest *through* the "johnny shirt" and not on the skin in spite of the fact that the infamous shirt provides ample room for at least rear (base of the lung) exposure. However, the thing that I have been "stewing" about over the past months is the fact that when I challenged them, the majority of nurses say "It doesn't matter" or "I can hear just as well."

I know that this is not what any of us were taught ... medical or nursing students. My exposure to the number of attendings and house officers was limited, but of those observed the proper use of the stethoscope was positive. I should not make any sweeping statements; however, I can only feel that there must be a large number of "role makers" who listen through cloth, for how else can nurses continue to do this and yet not be challenged?

I also note that many of the physicians depicted in movies or on TV are "cloth listeners," including some of the physicians in medical and pharmaceutical advertisements.

What has happened to the adage "a job worth doing is a job worth doing well (correctly)?

John M. Hoffer, M.D.

Oxford

"Philosophers Will Be Busy"

Letter to the Editor: Do you think you might establish a "Philosophers Will Be Busy" column as a regular section in the Journal? Perhaps this will generate the "active exchange of letters" you hoped might occur (*Conn Med* 1996; 60:368). Your question "Does your brain pose your questions or its questions?" is a good place to start. Does it make sense to separate the agent (self, mind) from the agency (brain, body)? Does it matter?

Newton's famous remark, "hypotheses non fingo"—"I do not make hypotheses," separated his revolutionary scientific work from the long tradition of Aristotelian and Scholastic philosophy. But the mathematical explication of the universe, Newton's framework, is itself a grand hypothesis. Boole's mathematical explication of the "laws of thought," inventing symbolic logic, is a contrasting hypothesis in philosophy. That the external world, and the inner world of reason, can be set forth in mathematical terms are hypotheses we have come to accept. Science and philosophy share the making of hypotheses but diverge on methods of proof. Newton's equations are actually descriptions, not explanations, of what happens: "hypotheses non fingo"—"I do not make explanations."

J.Z. Young cited Newton's remark in *Doubt and Certainty in Science: A Biologist's Reflections on the Brain,* from the B.B.C. lectures he gave in 1950. Young's book was the first effort to answer your question (is it I, or my brain?) in terms of information and communication theory. Human society ensures its survival by communication. The human brain is our elegant organ of communication, the neural equivalent of multiple organ systems superimposed on one another, largely redundant to permit flexible responses, while transmitting symbols and signs. According to Young, "our brains are so constituted that we have learned to speak always in terms of self and otherness. From babyhood onwards we learn to satisfy our needs by communicating with others and eliciting their cooperation." Speaking of "I, of oneself" is "the habit that gives rise to so much of the confusion over mind and body.... This habit of postulating active creatures within bodies, the habit of animism, is an extremely convenient device for communication."

Thus the brain poses its questions as your questions as its most efficient vehicle for communicating information between creatures whose survival depends on their social cooperation. The personal "I" and "you" are only means to this end, according to Young's hypothesis. The brain, not the "self" actually experiences the world outside the skin, and its own sensations within. Science gradually dispensed with primitive animism in the external inorganic world, by inventing chemistry. But science has not yet abolished animism from the living body, the notion of the private "ego" from the living tissue. Indeed there is little communicative advantage in the exile of the individual person, especially in a world that values individuality. But our means of mass communication is rapidly being transferred from the individual to the global, which alters survival contingencies. Cellular phones that lock into satellites, that lock into other satellites, will provide the means of inexpensive spread of information to and from all parts of the world in the next century. Televised global communication is already a reality.

Mind-brain difficulties arise as a by-product of little interest to the great majority, except those few brains which struggle to understand their own operations (or as we used to say in the 20th century, except those few persons who strive to understand themselves). Our living brains are already integral parts of huge intercommunicating networks of machines, part of the algorithm that provides software enlarging the networks, software contingent not only on hardware of the computers but on the wetware of other living brains. New software furnishes each little step, detail by detail, morsels swallowed by voracious machines to be integrated into the vast mass of their tissue of accumulated information, all processed in the blink of an eye. Soon this glut of information must reach critical mass, as we approach the tiniest wavelengths of ultraviolet light in our silicon computer chips. Dramatically rapid information acquisition is bound to alter human society. Even justice will be swift. We are only now coming to terms with our dependency on our new computer-driven society, and only now inventing language sufficient to deal with the challenges it imposes upon us.

This morning I, my brain that is, listened to PBS, not BBC. It heard the next chapter to "Genes and Behavior" (*Conn Med* 1996; 60:179) which Dr. Hollister's brain produced, with a little help from the old brains of Plato and Descartes. The phos-B gene in mice triggers the preoptic area of the brain of the female mouse to nurture her young. The mother mouse first sniffs her young, which triggers the preoptic area at the base of her frontal lobes. Without the action of the phos-B gene she walks away, and her young die within a day. Human beings also possess the phos-B gene. Fortunately it is usually working, so that human babies are nurtured and society becomes possible.

I was reminded of the "sign of the cross" at the base of the brain, where sex and violence meet! Nurturing behavior, the hallmark of social mammals, is controlled by primitive vertical structures in the limbic midline of the brain, converging on the preoptic area, close to sexual and olfactory regions (septum, anterior hypothalamus, paraolfactory area). These pleasure-giving, cooperative, amatory, and propagating vertical structures of the deep cerebral midline are intersected at right angles by the anterior commissure and other horizontal connections

between the two angry amygdala, the lateral gray masses in each anterior temporal lobe that mediate aggressive behavior. In the Kluver Bucy syndrome monkeys deprived of both their amygdalae are placid and hypersexual, playing with snakes, their natural enemies. These deep midline and deep lateral limbic structures in the human brain are represented in the old rhinencephalon or olfactory brain of lower mammals, now buried by the enormous expansion of human neocortex. Cerebral cortex is a mammalian invention, now capitalized in man. Reptiles and lower creatures do without it. The "sign of the cross" at the preoptic area is right at the basal intersection of these x and y coordinates of sex and violence in the brain, the love and hate that lies hidden beneath our most cooperative and competitive adventures as social but predatory creatures. I enclose a diagram of these limbic systems deep in our brains from an article I wrote with my friend Dr. Dila, "Synchronizing and Desynchronizing Systems of the Old Brain" (*Brain Research* 1968; 11:285-93). It depicts the various interconnections between these primitive vertical and horizontal parts of the brain that affect our deepest survival behaviors. When Dr. Penfield read this paper, he invited me to his office. As a neurosurgical resident this was a great thrill for me, since I was an admirer of his ground-breaking work on stimulation of the unanesthetized human brain (during epilepsy surgery), and the founding father of the Montreal Neurological Institute. Dr. Penfield said: "Charles, why do you suppose that human memory depends on old-brain structures, the hippocampus, in the smell-brain of the lower creatures?" I leave this question for another chapter, perhaps the next, of "Philosophers Will be Busy." Dr. Penfield's question has a certain charm, at least for me.

There are 100,000 genes in the human genome, and only 15,000 have been identified. Some of these genes, like the phos-B gene, are involved in the passions; others in cognitions. "The first discovery of a single gene involved in cognition" was described in "Researchers Track Down a Gene That May Govern Spatial Abilities (*New York Times*, 23 July 1996). Some of these genes trigger primitive responses in the old limbic brain, while others trigger cognitive processes in the neocortex. What gene will be implicated in our antisocial aggressive behaviors? We know which part of the brain it will stimulate. Doctor Hollister in his "Genes and Behavior" wondered: "Suppose we find a violence gene?" Suppose we do? Will it also be triggered by smell? Will it matter? Hypotheses non fingo.

Charles W. Needham, M.D., F.A.C.S.

Norwalk

The editor responds: I sent Dr. Needham's letter to three of our thoughtful colleagues, and two responded with an only barely qualified "no" to his suggestion for a "Philosophers Will Be Busy" column. My suspicion is that they felt that physicians, while competent in ethics and aesthetics, might flounder, or even founder, in metaphysics and epistemology! However, there still may be some intreped souls out there who will venture to weigh in on the nature of reality or how we know what we think we know!

CSMS-IPA

To the Editor: The Hartford County Medical Association and the New Haven County Medical Association are seeking to create an Administrative Services Corporation to direct and manage a new HMO in Connecticut.

As stated in the public MedServe of Connecticut, Inc. letter, "more than any other facet of its corporate philosophy, that difference may be summarized by the structuring of the new entity to retain a strong element of physician control of the medical model at the IPA level."

In 1986, the State Medical Society formed its own IPA with a Board consisting of duly elected physician members from each county and balanced between specialists and primary care with equal representation from all counties. The CSMS-IPA was formed. That IPA has not changed its structure or its mission. As of today, it remains wholly owned by the State Medical Society and is responsive to the physicians of this state. All counties elect representatives to its board. The sale of M.D. Health Plan HMO to a physician-directed and physician-managed plan (Health Systems International) in order to provide viability over the years to come did *not* include the IPA. That IPA still oversees and provides the philosophical direction for the medical policies for the HMO. There is no abandonment of the commitment to keep open access program with *no* control by either primary-care gatekeeper or specialist. There is *no* abandonment of the concept that no one group or county will be *paterfamilias* to the rest. There is *no* abandonment of the prior and present mission statement that makes the patient and his or her physician the focal point of care.

The IPA's decision to change the fee schedule to RBRVS was not accompanied by *any* reduction in income to the IPA. The use of a preauthorization system was in lieu of a gatekeeper approach and is constantly being streamlined to be as transparent as possible except for egregious cases that will be judged by the IPA peer review committee.

We now have over 6,500 physician providers in the state and are poised to enter the Medicare market at a fee schedule of Medicare x 1.25 and to do so in collaboration with the hospitals of the state.

M.D. Health Plan remains committed to its IPA and the State Medical Society that owns it. The new plans will serve to fragment and diminish the role of physicians in

playing a central role in managed care in this state. The CSMS-IPA has succeeded in providing a forum for organized medicine and hence, for the physicians of this state in having an IPA system of their own.

The implications in the MedServe letter are interesting. They discount the fact that the counties do now have a central IPA they own and control. They are going to create this new HMO to "eliminate the 'hassle factors,'" but with the ultimate hassle factor planned—a gatekeeper system. They are going to remove the "administrative barriers" and substitute the administrative services of two large county associations.

Additionally, the provider contract states that this new IPA provide for you multiple health plan contracts, and that providers will be subject to the provisions of the procedures and standards of the contracted health plan, not the IPA!

The question of whether or not CSMS-IPA is any different cannot be answered from the outside. Ask your county representatives to the IPA Board including the President of the State Medical Society if the CSMS-IPA indeed functions as the directors of medical care and the ultimate reviewer of physician performance or not. Our entire NCQA approach actually shares the process with the IPA at a control level!

The risk of managed care is considerable; the ideal situation is to have a functioning IPA controlled by physicians and owned by physicians with the HMO entrusting medical care decisions to the IPA. That relationship should be based on mutual respect with risk and reward being shared by both and resources being committed by the HMO to assist and support. We now have this at the CSMS-IPA/M.D. Health Plan.

I would ask any physician to visit our operations at their request and to work with the CSMS-IPA and their own county representatives in making it the success it can be.

In summary, managed care is replacing the fee-for-service indemnity type medical reimbursement system that was. The physicians of the state should assure themselves that self-serving parochial interests in this arena must be subservient to high quality medical care directed and controlled by a physician organization that is statewide such as the CSMS-IPA, and that preserves the patient-physician relationship as the focus of all medical care. The CSMS-IPA serves that function and serves it well. If we continue to fragment ourselves, we will expose ourselves to more than inconveniences.

Vincent J. Catrini, M.D.
Chairman of the Board and Chief Medical Officer
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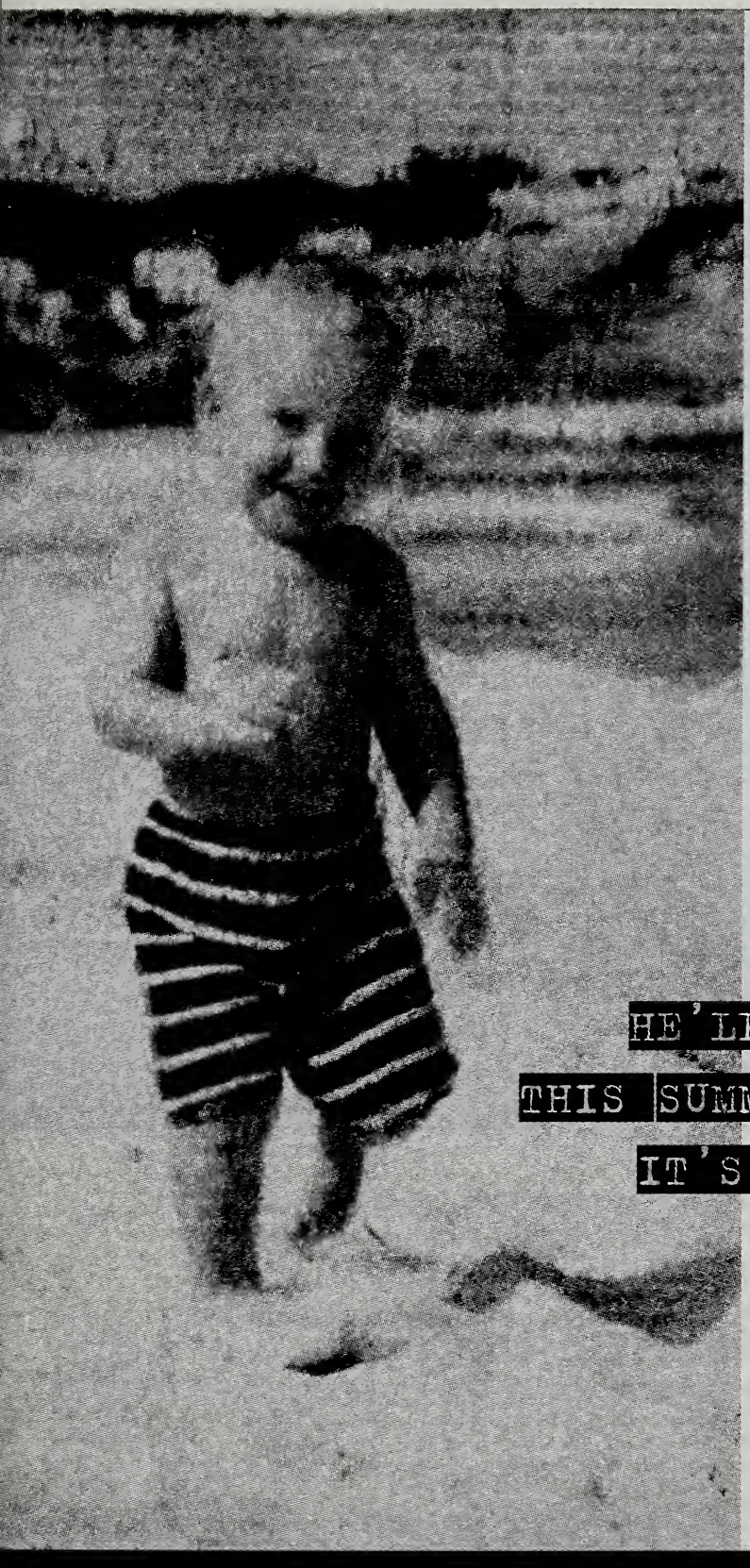

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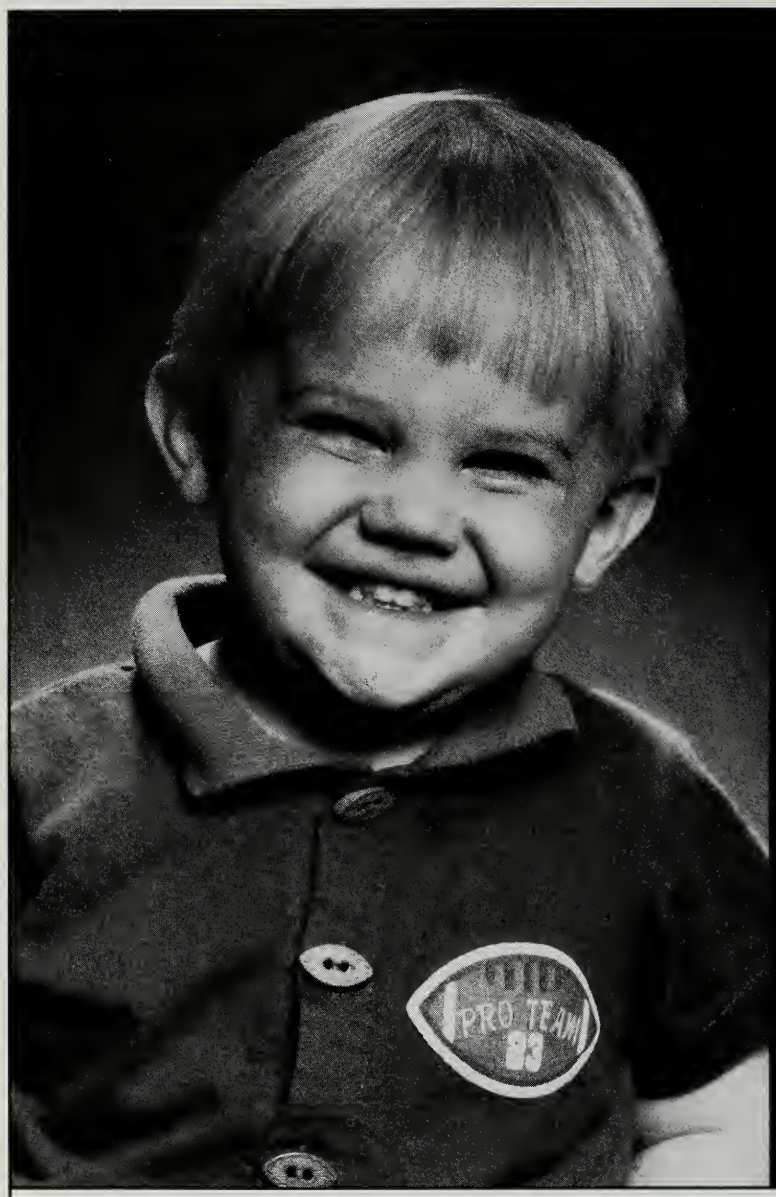

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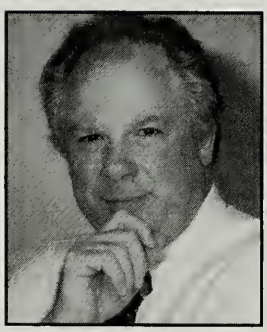

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Hemophilus Influenzae Septic Arthritis and Pneumonia in an Adult as the First Presentation of Multiple Myeloma

SUDHIR K. BHATNAGAR, M.D., SAMANTHA SEGAL, B.A,
AND ANJUM SIDDIQUI, M.D.

ABSTRACT—We describe an apparently healthy woman who presented with monoarthritis of the right knee and a history of respiratory infection. The synovial fluid cultures grew beta lactamase-negative *H. influenzae*. Chest roentgenogram showed patchy densities throughout the right lung. Investigations for a predisposing factor for this *H. influenzae* infection revealed underlying multiple myeloma. As *H. influenzae* pyoarthrosis is extremely rare in adults, we suggest that an underlying systemic cause be sought in all such patients.

NONGONOCOCCAL septic arthritis in a majority of adults is monoarticular and most commonly caused by gram-positive aerobes, whereas gram-negative bacteria account for only 18% of such infections.[1] While *H. influenzae* is a prominent etiological agent for pyoarthrosis among infants and young children,[2,3] this organism is reported in less than 1% of all adult cases of bacterial septic arthritis.[3-5] Reviewing 45 years of English literatures, Borenstein et al identified only 25 such cases.[5] In this case report, we describe an apparently healthy female who presented with acute monoarthritis of the right knee which proved to be septic arthritis due to *H. influenzae*. Upon further investigations she was found to have bronchopneumonia of the right lung and underlying multiple myeloma. We believe that a similar case with a combination of such clinical findings has not been previously reported.

SUDHIR K BHATNAGAR, M.D., presently resident PGY III-Internal Medicine, previously consultant cardiologist abroad; SAMANTHA SEGAL, B.A., third year medical student, University of Connecticut School of Medicine, Farmington; ANJUM SIDDIQUI, M.D., fellow in pathology, Department of Pathology, Hartford Hospital.

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Case Report

An 81-year-old woman* in apparently good health was admitted to the hospital with a history of severe pain and swelling of the right knee which had developed abruptly on the day prior to admission. There was no history of fever, trauma to the knee, or previous joint disease. She also complained of a one-month history of nonproductive cough and mild shortness of breath without any chest pain, but had not sought medical attention. The past medical history revealed only mild hypertension and hyperlipidemia for which she took metoprolol and gemfibrozil respectively. She denied alcohol abuse, intravenous drug abuse, or cigarette smoking. On the initial physical examination, the patient appeared ill and lethargic and in pain. Her temperature was 37.5°C, pulse rate 100/minute, respirations 24/minute, and blood pressure 130/80 mm Hg. The right knee was markedly erythematous, warm, swollen, and extremely tender, with painful restricted range of motion limited to a few degrees of flexion and extension. There was no wasting of the thigh muscles. A patellar tap was easily obtained revealing the presence of fluid. The respiratory system examination revealed crepitations and rhonchi in the right infraclavicular and mammary region, with an extensive pleural rub in the same areas. The remainder of her physical examination was not remarkable.

On laboratory examination, the hemoglobin was 11.5 g/dL, hematocrit was 33.5%; white blood cell count 20,900 cu mm with 81% polymorphs,14% band cells, 4% lym-

*Patient of Dr. C. Goldenthal.

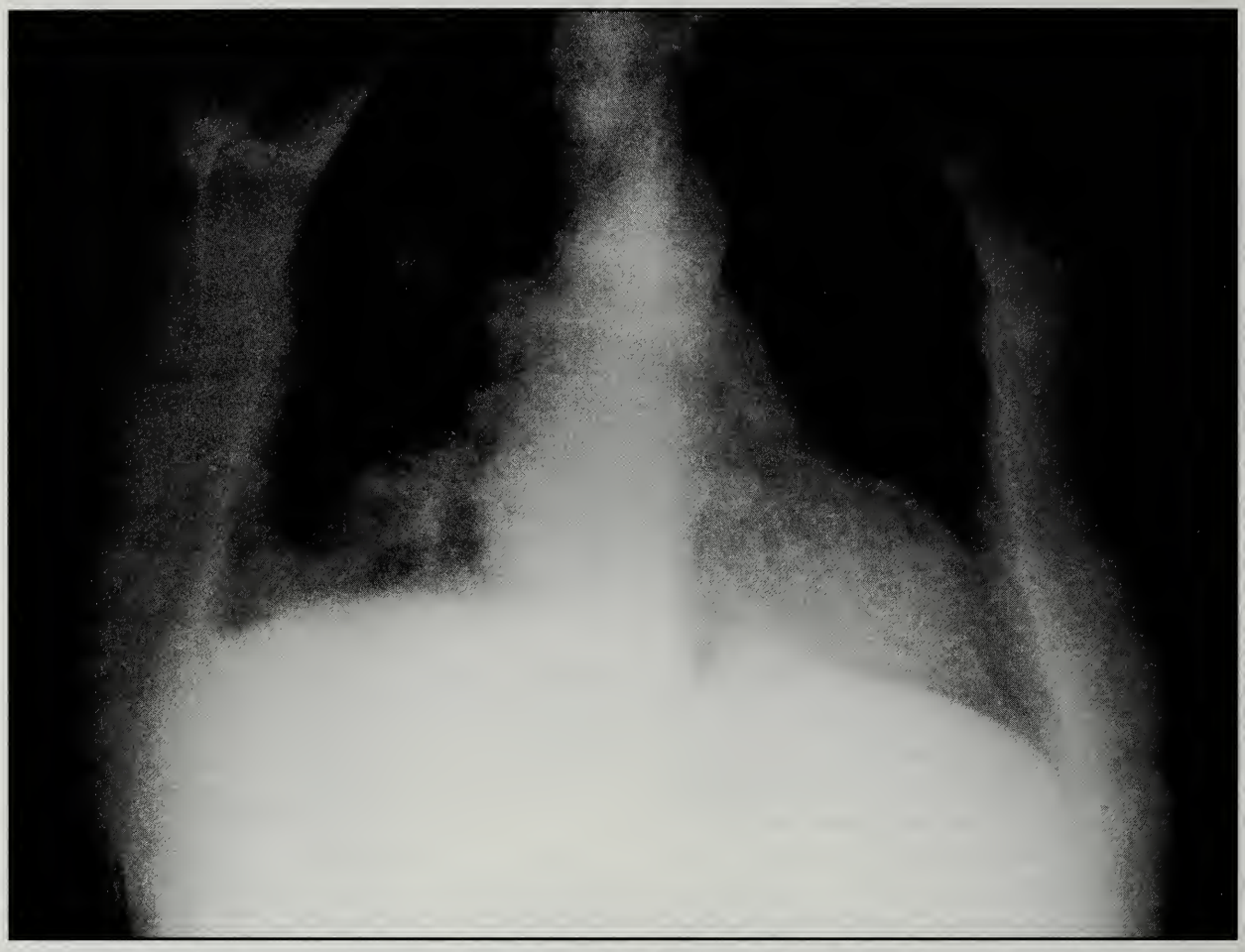

Figure 1.—Chest radiograph of the patient on admission to the hospital showing infiltrations in the right lung consistent with bronchopneumonia and a small pleural effusion.

phocytes, 1% monocytes, platelet count 240,000/μL, and erythrocyte sedimentation rate 138 mm/hr. Blood urea nitrogen was 48 mg/dL and creatinine 1.6 mg/dL. Urine analysis: 2+protein, 11-24 white blood cells /high power field, and a trace of leukocyte esterase. Chest roentgenogram showed patchy densities throughout the right lung consistent with bronchopneumonia and in addition, a small right pleural effusion (Fig. 1).

Aspiration of the right knee yielded yellow, turbid synovial fluid with a white blood cell count of 351,000/μL (72% granulocytes, 19% monocytes, 6% lymphocytes, 3% histiocytes), red blood cells 7,100/μL. Gram stain of the fluid revealed gram-negative rods. Moderate intracellular calcium pyrophosphate crystals were also seen. No sputum sample could be obtained for analysis.

The patient was initially treated with oral ciprofloxacin 500 mg twice daily, and ceftazidime 1g intravenously every 12 hours and after 48 hours these medications were discontinued and replaced by intravenous ceftizoxime, 1g every 8 hours.

The first sample of synovial fluid grew beta lactamase negative nontypable *H. influenzae*. The blood and urine cultures remained sterile.

During the first 12 days of her hospitalization, her hemoglobin and hematocrit fell to 7.9 g/dL and 23.2% respectively. The peripheral blood smear showed rare tear-drop cells and rouleaux formation. The serum protein electrophoresis revealed a well-defined mid-gamma band with total protein 6.8 g/dL (normal: 5.9-8.1), albumin 1.9 g/dL (3.2-4.1), alpha^1 0.7g/dL (0.2-0.5), alpha^2 1.4 g/dL (0.5-0.9), beta 0.7 g/dL (0.8-1.2), gamma globulin 2.1 g/dL (0.9-1.7). Quantitative serum immunoglobulin analysis showed IgG 2497 mg/dL (normal: 550-1,570 mg/dL), IgA 75 mg/dL (90-400 mg/dL), and IgM 64 mg/dL (50-235 mg/dL). The pattern was consistent with monoclonal IgG kappa type gammapathy. The serum beta 2 microglobulin level was 3.2 mg/dL (normal 0-2.4), serum calcium 1.32 mmol (normal 1.17-1.29), phosphorus 2.8 mg/dL (normal 2.2-4.6), uric acid 2.7mg/dL (2.6-6.0). Peripheral blood flow cytometry showed decreased absolute lymphocyte count (1,030/μL) with mildly decreased absolute number of CD3+ CD4+ (T helper) 514/μL (535-1,451) lymphocytes; and normal CD3+ CD8+ (T suppressor) count 229/μL (139-783). ELISA and Western blot assays were negative for HIV antibody. Urine immunoelectrophoresis detected monoclonal free kappa light chains and monoclonal IgG.

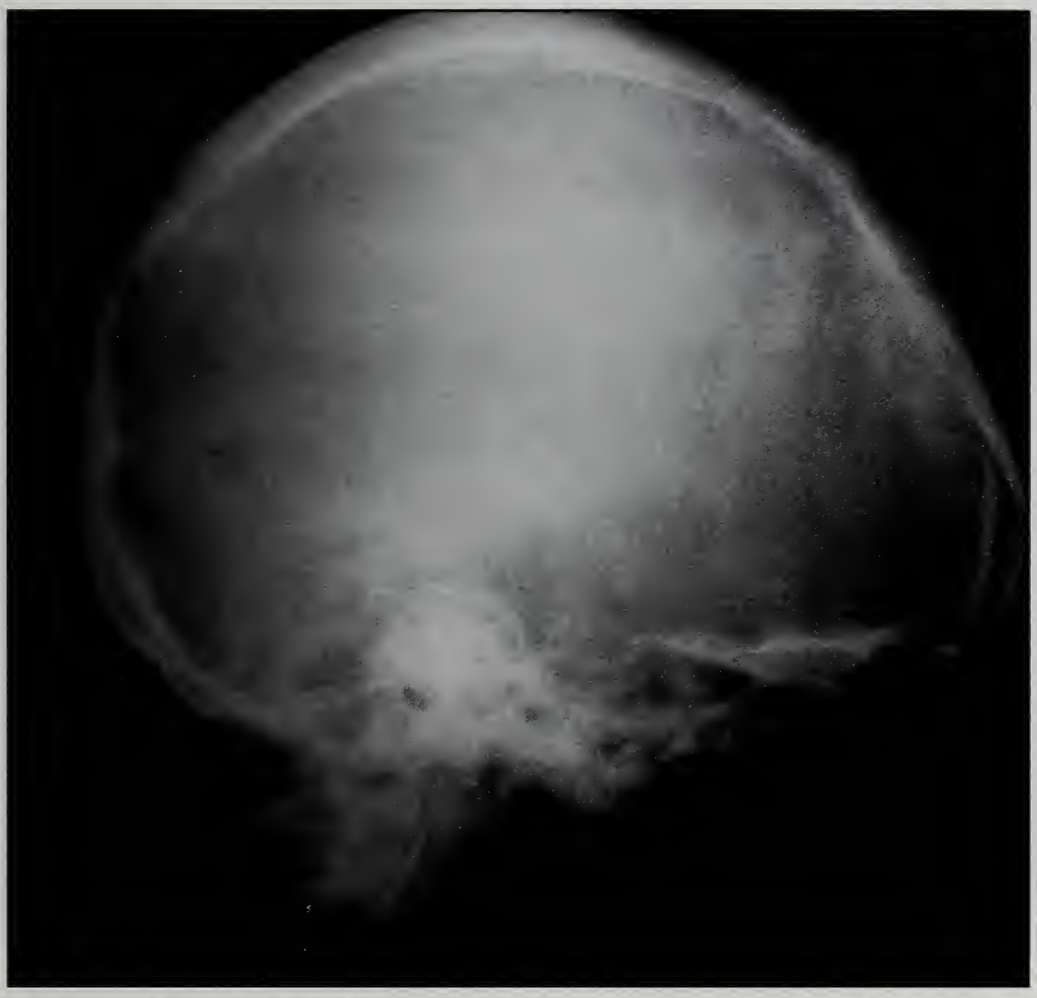

Figure 2.—The skull radiograph demonstrates a single "punched out" lytic lesion in the occipital region.

The ECG was normal and an echocardiogram did not reveal any valvular vegetations. The skull roentgenogram showed a single 1 cm size lytic lesion in the occipital region (Fig. 2). The remainder of the skeletal survey was unremarkable. A bone marrow biopsy demonstrated a hypercellular marrow with 20% to 25% plasmacytes consistent with plasma cell myeloma (Fig. 3).

The patient underwent repeated aspirations of the knee joint and arthroscopic lavage. The arthritis improved gradually and her lung findings also improved clinically within one week. She was maintained on antibiotics for three weeks in the hospital and was discharged on ciprofloxacin 750 mg orally twice daily for an additional two weeks. The infiltrates and the pleural effusion had nearly resolved at the time of her hospital discharge. The patient's internist has reported no further problems.

Discussion

Septic arthritis due to *H. influenzae* in healthy adults without associated comorbid conditions and precipitating factors is rare. In 1986, Borenstein et al published a 45-year review of literature in which 22 of the 29 adult patients with *H. influenzae* septic arthritis (including their own four cases) had predisposing factors that included trauma, rheumatoid arthritis, systemic lupus erythematosis, diabetes mellitus, splenectomy, gout, acquired hypogammaglobulinemia, and multiple myeloma.[5] More recently, it has been suggested that *H. influenzae* be included as a potential pathogen in patients infected with HIV-1 virus.[6] Our patient presented without obvious predisposing factors. The presence of an unusual pathogen like *H. influenzae* in healthy adults led us to investigate further to determine if an immunocompromised state existed in our patient and multiple myeloma was identified.

Although sputum could not be cultured and blood cultures were sterile, we believe that *H. influenzae* pneumonia was the initial source of infection which then spread by the hematogenous route to her right knee. The negative blood cultures in this elderly patient with an underlying multiple myeloma and a systemic infection involving the lungs and the knee joint was surprising, considering the fact that she had not received any antibiotics prior to this admission. The identification of calcium pyrophosphate

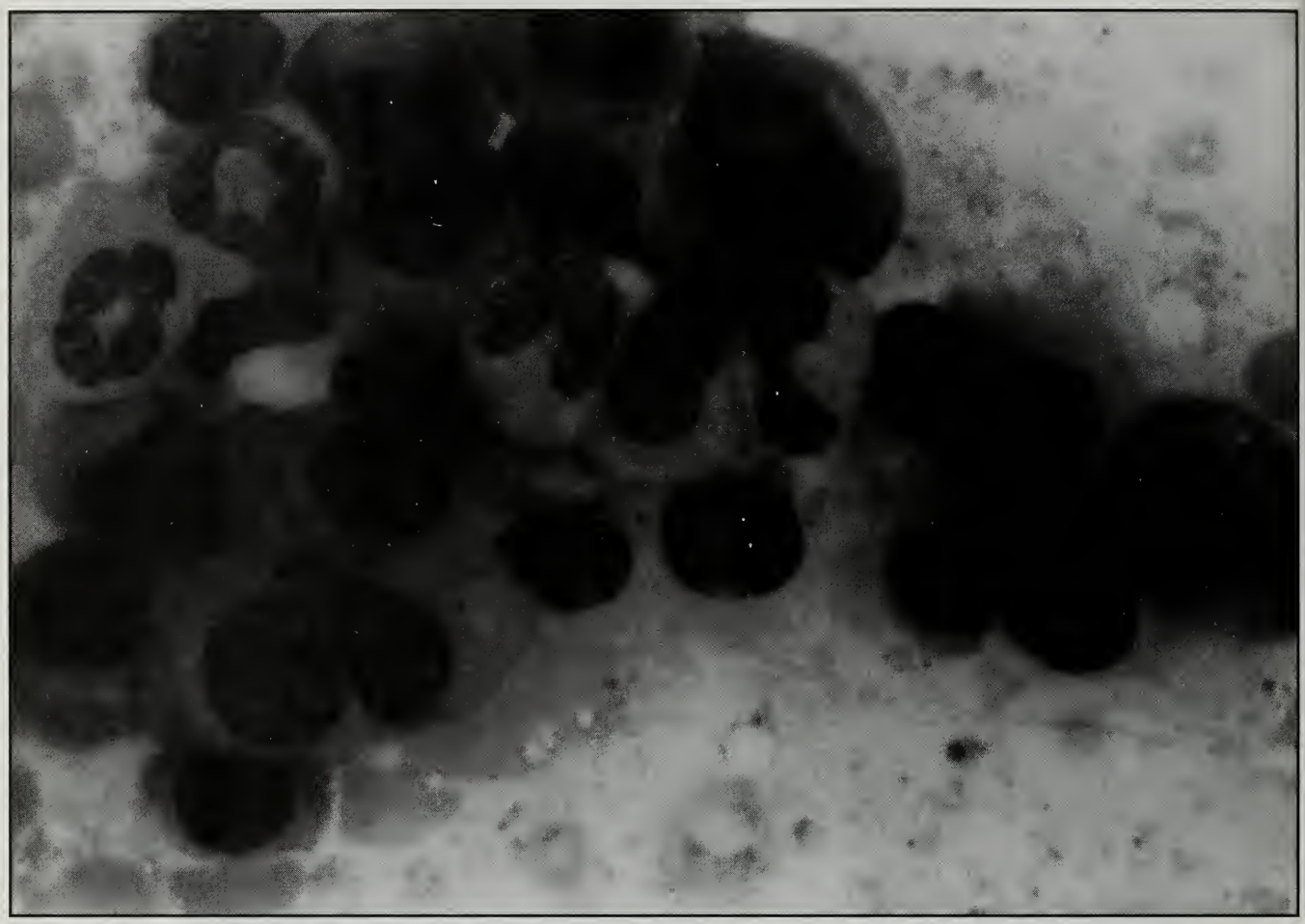

Figure 3.—Bone marrow aspirate with cluster of abnormal plasma cells (hematoxylin-eosin, original magnification X 100).

dihydrate crystals in the synovial fliud may have represented an incidental finding as deposition of these crystals is common in the elderly.[7] Alternatively, synovitis could have occurred from both crystals and microorganisms, as infection in a joint with preexisting microcrystalline deposition could lead to crystal shedding.[7] We believe that a similar clinical case presentation with a combination of *H. influenza* arthritis, pneumonia, and multiple myeloma has not been reported previously.

In the previous case reports, we found only two patients with both multiple myeloma and *H. influenza* arthritis, and in one case the diagnosis of multiple myeloma was well known prior to the presentation of septic arthritis.[5,8] More recently Berthaud et al have reported a case similar to ours with pyogenic arthritis due to *H. influenzae* (but without pneumonia) leading to a diagnosis of multiple myeloma.[9] According to these authors, as of 1991, only 33 cases of *H. influenzae* septic arthritis have been published in the English literature and only two of them associated with multiple myeloma.

Gram-negative infections, including those due to *H. influenzae*, constituted three-fourths of all infections that occurred within two months of diagnosis of multiple myeloma and thereafter, according to one report.[10] Patients with multiple myeloma have poor antibody responses that are normally T-cell-independent and the susceptibility to serious infections due to hypogammaglobulinemia is well recognized. A subset of CD4 + cells may be decreased as well, as in our patient. In the previous case reports, four patients[5,11,12] with *H. influenzae* septic arthritis without myeloma were suspected on clinical grounds to suffer from pneumonia in addition, but the chest roentgenogram was positive in only two patients.[5,11] Serum IgA, which plays an important role in host defense against bacterial infections, was mildly reduced in our patient and this could have played a role in the development of *H. influenza* pneumonia.

Summary

This case illustrates the significance of investigating patients with *H. influenzae* septic arthritis for a predisposing factor as the condition is extremely rare in healthy adults and the diagnosis and treatment of an underlying major systemic condition may be necessary.

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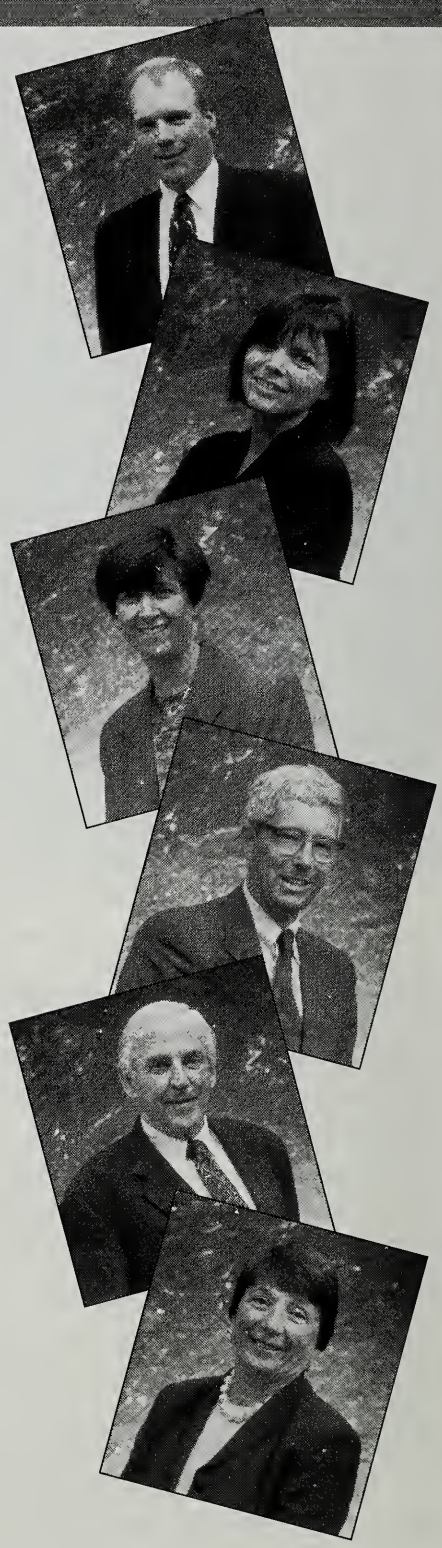

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Management Protocol for an Enhancing Cerebral Lesion in HIV Infection

PASQUALE F. FINELLI, M.D.

Introduction

AN enhancing lesion due to toxoplasmosis is the most common focal computerized tomographic (CT) abnormality encountered during the evaluation of neurologic dysfunction in an HIV-infected patient. Although clinical presentation and the radiographic findings of lymphoma, the most probable alternative, are generally indistinguishable from those of toxoplasmosis, empiric treatment is recommended as clinical and/or CT improvement occur in 90% of cases with toxoplasmosis in two weeks.[1-2] Failing this approach, a diagnostic stereotactic brain biopsy is advocated,[3] however, the lack of clearly defined criteria for patient selection and timing of biopsy frequently results in indecision with an extended hospital stay, uncertain diagnosis, and risk of serious side effects from unnecessary treatments.[4] Similarly, irreversible clinical deterioration may result in as short a period as days to weeks if lymphoma is untreated,[5] and delay in starting radiation therapy reduces the clinical and radiologic response and duration of survival.[6] Recently thallium-201 brain single–photon emission computed tomography (SPECT) has provided a new diagnostic modality for central nervous system lymphoma allowing for more timely management decisions. A cost-effective and medically responsible management protocol that considers brain biopsy or radiation therapy as early as day three, is proposed.

PASQUALE F. FINELLI, M.D., Department of Neurology, Hartford Hospital, University of Connecticut School of Medicine, Hartford. Reprint requests to Dr. P.F. Finelli at Hartford Hospital, 80 Seymour Street, Hartford, CT 06102.

Case History

A 38-year-old male intravenous drug user with AIDS was admitted with recent onset tonic-clonic seizures. After a brief postictal period a neurologic examination revealed no abnormality. A CT scan demonstrated a ringlike lesion in the right occipital lobe with surrounding edema, which enhanced with contrast.

Hospital course:

Day 1—The patient was started on antitoxoplasmosis treatment with pyrimethamine and clindamycin.

Day 4—A toxoplasmosis serology for IgG was negative.

Day 7—A thallium-201 brain SPECT was positive.

Day 8—A neurosurgical consultation advised continued treatment for toxoplasmosis for the balance of 14 days.

Day 9—A radiation oncology consultant refused radiation therapy without tissue.

Day 11—A repeat CT scan showed increase in lesion size and edema.

Day 16—A stereotactic brain biopsy was positive for lymphoma.

Day 22—Radiation therapy was scheduled; however, patient and family refused.

Day 25—Patient was discharged to extended care facility.

Discussion

Toxoplasmosis and lymphoma account for more than 85% of cerebral mass lesions in HIV-infected patients, with toxoplasmosis being four to six times more common.

Table 1.—Management Protocol for Enhancing Lesion in HIV Infection
Day 1
• Enhancing cerebral lesion on CT scan or MR • Laboratory investigations: CD4 count, VDRL, Cryptococcal antigen, PPD, toxoplasma and hepatitis B serology, CBC, coagulation, and biochemical profile, chest film • Consultations: neurology, neurosurgery, infectious disease, radiation oncology • Begin treatment with clindamycin and pyrimethamine
Day 2 • Thallium-201 SPECT scan of head
Day 3 • SPECT scan (+) • Brain biopsy in accordance with criteria from Table 2 or • Radiation therapy if patient not a candidate for brain biopsy • SPECT scan (–) • Continue antitoxoplasmosis therapy for balance of two weeks followed by repeat CT scan • If clinical or imaging deterioration occurs after five days or if no clinical or CT improvement is noted by two weeks a brain biopsy should be performed in accordance with criteria in Table 2 to rule out abscess or other pathology

Once a rare neoplasm, lymphoma is projected to be the most common primary cerebral malignancy in the AIDS and general population by the year 2000.[2] The majority of AIDS-associated lymphomas are diffuse aggressive malignant lymphomas that may progress rapidly within a matter of days.[5] As radiation therapy alone or in combination with chemotherapy may result in significant improvement in 75% of patients and increase mean survival from 42 to 134 days,[6,7] accurate diagnosis is critical. Serologic testing and neuroimaging to differentiate these two conditions,[1,8-9] probability estimates favoring toxoplasmosis, and the decision to select empiric treatment or brain biopsy, have all previously been proposed.[10] More recently, thallium-201 brain SPECT scan has been shown to be sensitive, specific, and highly diagnostic for lymphoma. In a group of 37 patients with AIDS and CT and magnetic resonance imaging evidence of an intracranial mass lesion, 12 had either biopsy or autopsy proven lymphoma and a positive SPECT scan with no false–positive or false-negative results.[11] A second study of 13 similarly affected patients showed a positive SPECT scan in seven patients, six of whom proved to have lymphoma. The one false-positive was due to multiple concurrent infections.[12] On the strength of these studies, a positive thallium SPECT scan may, by itself, justify brain biopsy or radiation therapy, however, until additional confirmatory studies clearly define the false-positive rate for lymphoma, it would seem prudent to obtain tissue prior to beginning radiation therapy (Table 1). Various factors are necessary to consider before committing to brain biopsy (Table 2) and include risk of biopsy (10%) *vs* adverse effects of empiric treatment [29%(8% serious)].[10] If a patient with a positive SPECT scan does not meet the proposed biopsy criteria, radiation therapy is recommended. If neither brain biopsy nor radiation therapy is an option, the patient can be discharged and managed at home or an extended care facility. If the SPECT scan is negative then toxoplasmosis is most likely and continued antitoxoplasmosis therapy with repeat CT after two weeks is recommended. Brain biopsy to rule out abscess or other pathology should be pursued if interim clinical or imaging deterioration occurs after five days or when no response

Table 2.—Factors to Consider for Brain Biopsy
• Willingness of patient to undergo brain biopsy and subsequent treatment (ie, radiation therapy, antimicrobial therapy) • No active life-threatening systemic illness • Absence of dementia or functional impairment from neurologic disease (Karnofsky score > 50) • Risk of brain biopsy *vs* adverse effects of empiric treatment • Additional morbidity during two weeks of empiric treatment

follows 14 days of empiric therapy, especially when toxoplasmosis serology is negative and/or a single lesion is seen on brain imaging.[1] The hospital cost for the patient described here was $38,460. Using the suggested management protocol the same evaluation could have been achieved with discharge by day eight at an estimated cost of less than $25,000. Delay of biopsy in our patient until day 16 and discharge on day 25 is not unusual as some series show an average delay of four weeks from start of empiric therapy to biopsy.[9] In addition to a reduced length of stay and cost, early diagnosis and treatment has the realistic expectation for increased quality and duration of life.[6] Other modalities reported helpful in the early diagnosis of CNS lymphoma include positron emission tomography scanning and detection of Epstein-Barr virus-DNA in cerebrospinal fluid by polymerase chain reaction.[13-14] Cost, associated risk, availability, and reproducible results will determine the usefulness of these tests in future management protocols. As demonstrated with other neurologic diseases, a treatment protocol can result in significant savings in hospitalization costs primarily related to reduced length of stay.[15] Considering the cost, adverse effects of empiric treatment, and morbidity of delayed diagnosis and treatment, a management decision according to the proposed protocol is suggested. The protocol can easily be implemented by various disciplines and substantially reduce health costs while providing timely quality care.

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Case Report: Autosomal Dominant Polycystic Kidney Disease

DAVID P. NEUMANN, M.D., HELEN M. KELLETT, M.D.,
HARRY CHEN, M.D., AND NANCY D. ADAMS, M.D.

A 52-year-old white female with autosomal dominant polycystic kidney disease since age 13 has been followed at our institution since 1992. Her family history includes hypertension and cerebral aneurysms. She has undergone two previous percutaneous cyst aspiration procedures for abdominal discomfort, dyspnea, and urinary frequency which were attributed to mass effect by large renal cysts upon her diaphragm and bladder. She was recently referred for a third procedure for similar symptoms. Her blood pressure prior to the recent procedure was 170/116 mm Hg, and renal function tests showed a blood urea nitrogen (BUN) value of 27mg/dL (range 8-24 mg/dL) and a creatinine of value of 1.2mg/dL (range 0.6-1.2). Liver function tests were unremarkable.

A computerized tomographic (CT) scan of her abdomen (Figs. 1 and 2) showed markedly enlarged kidneys containing numerous cysts, some of which showed curvilinear calcification corresponding to the cyst walls. Numerous cysts were also present throughout her liver, with associated hepatomegaly.

Discussion

Autosomal dominant polysystic kidney disease (ADPKD) is the most common hereditary renal disease.[1] The genetic defect has been localized to the short arm of chromosome 16.[2] There is nearly complete penetrance of the disease in carriers who live into their eighth decade of life.[1,2,3] Because some patients with ADPKD die of unrelated causes, it is characterized by variable expression, and therefore a positive family history of the disease may be found in only 50% to 75% of cases.[1,2] Many authors believe that if a screening sonogram fails to demonstrate cysts by the third decade in a patient with a positive family history of ADPKD, it is unlikely that he or she has the disease.[1]

The cysts in ADPKD usually develop from the loop of Henle, Bowman's space, and the proximal convoluted tubules.[1] Cysts vary in size from several millimeters to several centimeters in size. With time, the cysts typically increase in size and number, compressing intervening renal parenchyma, distorting the collecting system, and interfering with renal function.[1,3] Renal failure occurs in 50% or more of patients by the seventh decade of life.

Most patients with ADPKD become symptomatic in the fourth or fifth decade of life, usually presenting with abdominal or flank pain, often with gross or microscopic hematuria.[1,2,3] Patients may also present with a palpable mass or masses due to markedly enlarged kidneys or the displacement of adjacent organs. Because of an increased incidence of both urinary tract infections and (UTI) and calculi, patients may present with signs and symtoms of infection or colic or both.

Hypertension is common and may occur before the laboratory evidence of impaired renal function.[1] Both proteinuria and hematuria are frequently present. Hematuria may result from cyst rupture, renal calculus, infection, and malignancy.[1,2,3] Polycythemia may occur due to elevated production of erythropoetin.[1,3]

Imaging studies are helpful in documenting the disease and its extent as well as any complications. Infected cysts

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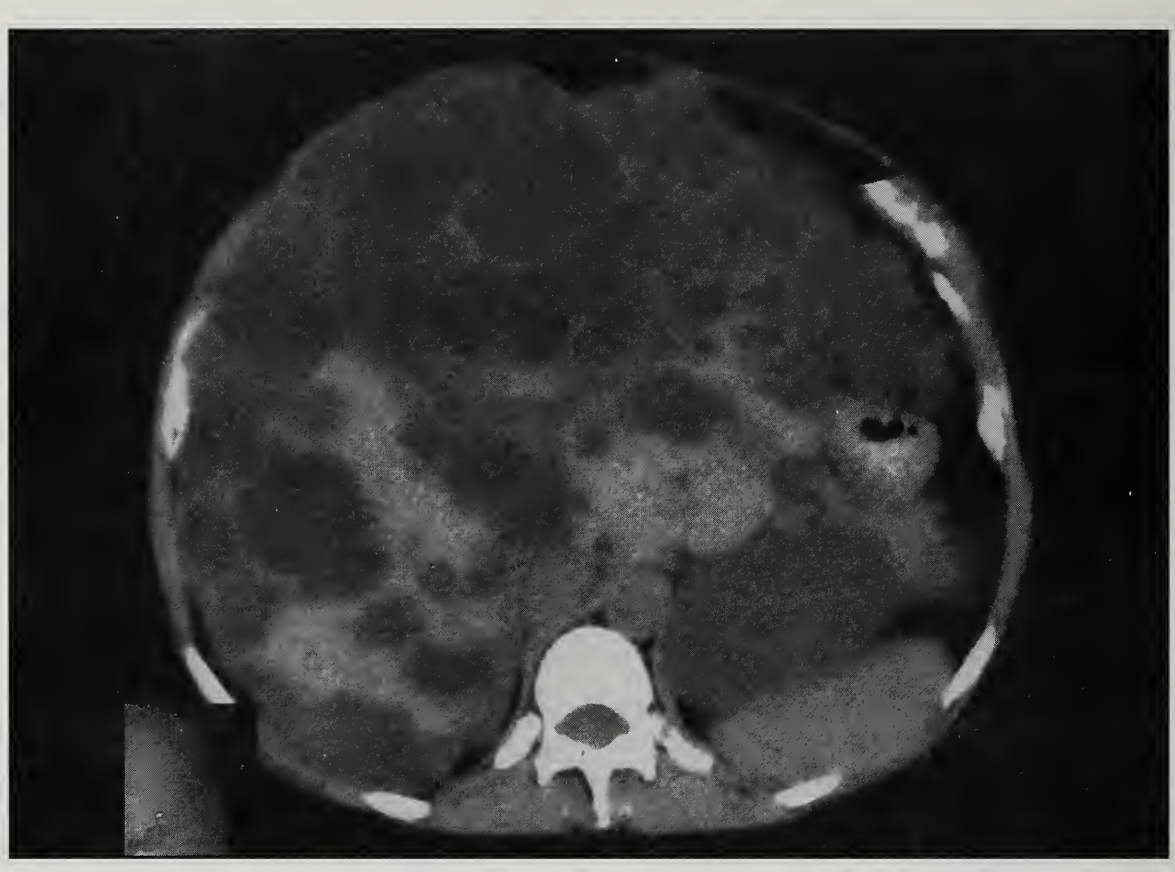
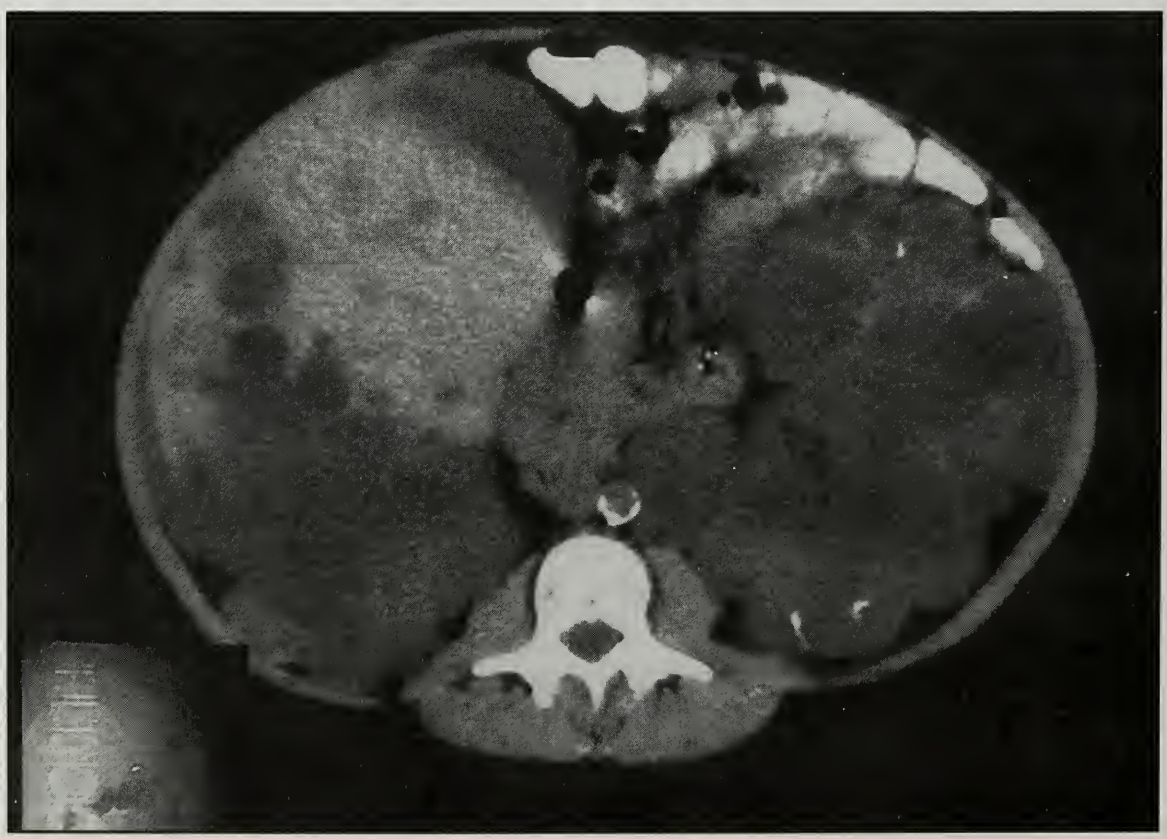


Figure 1.—CT scan section through the upper abdomen shows numerous cysts scattered throughout the liver parenchyma and a large cyst partially seen arising from the upper pole of the left kidney

Figure 2.—CT scan section at a lower level in the abdomen shows markedly enlarged kidneys almost completely replaced by cysts. Curvilinear cyst wall calcifications can be seen in the left kidney.



should be suspected in patients with fever, leukocytosis, and flank pain, especially if one or more cysts contains a thick, irregular wall on sonography or CT.[2,3] Hemorrhage into a cyst, which is especially common after even mild trauma, is seen best on CT, where one notes increased intracystic attenuation values.[1] Calcification in the walls of cysts is frequently seen as in our case.

ADPKD is associated with hepatic cysts in up to 60% of cases.[1] Cysts are also seen with increased incidence in the pancreas (10%) and spleen (5%) and in many other organs but with much less frequency.[1,3] There is a well-known association between ADPKD and the presence of cerebral aneurysms, with aneurysms being reported in 15% to 40% of patients.[1,2] Death from subarachnoid hemorrhage due to aneurysmal rupture occurs in approximately 10% of patients.[1,3]

In summary, ADPKD is a relatively common inherited disease whose diagnosis can usually be made clinically. Imaging studies, particularly sonography and CT, show characteristic findings and are useful in documenting the presence and extent of disease and in managing its complications.

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Abstracts:
Fourth Annual Meeting and Scientific Assembly of the Connecticut College of Emergency Physicians

23 October 1996

FORWARD: The Fourth Annual Scientific Assembly of the Connecticut College of Emergency Physicians was held on 23 October 1996. Seven abstracts were accepted for presentation with Michael Bishop, M.D., a member of the American College of Emergency Physicians, judging the presentations. The winner of the "CCEP Best Research Presentation of 1996" was Gregory S. Raskin, a third-year medical student of the Yale University School of Medicine.

Continuous Monitoring and Display of Emergency Department Patient Flow and Waiting Times: A Failure to Reduce Overall Length of Stay

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Section of Emergency Medicine

Overcrowding and delays are primary causes of dissatisfaction in the emergency department. Commercially available emergency department patient tracking systems are available which are intended to facilitate patient flow and decrease lengths of stay. Despite anecdotal expressions of enthusiasm, however, we have been unable to find any refereed reports of controlled studies showing a benefit of such a system to patient flow or waiting times. The current study was undertaken to determine whether continuous real-time monitoring and display of significant care process intervals could affect patient waiting times in the emergency department.

Methods.—The study measured total length of stay of patients in an urban based academic emergency department in a control phase and in the presence of a computer screen displaying information regarding specific care process time intervals. Software having features in common with some of the proprietary products available was designed by one of the authors (MR). It allowed a screen in the emergency department to display a number of "patient status" indicators which had been derived from our analysis of emergency department patient-care processes. These patient status indicators included such items as "Awaiting Initial RN Eval" and "Awaiting X-Ray Results." The software automatically alerted staff when waiting time exceeded a predetermined interval by highlighting the patient's status in red. Data were collected for total patient length of stay during the period the screen was in place and in control periods.

Results.—Mean length of stay for the three periods were, in the control period, 228 minutes; and in the experimental period 264 minutes. Length of stay actually increased during the intervention period by 36 minutes ($P<.05$). During the intervention phase, however, the mean length of stay was prolonged by several patients not finding beds and staying overnight in the emergency department unit in which the study took place, a unit which normally closes at 11:00 P.M. Correcting for these outliers, the length of stay during the intervention period was 243 minutes, which is not significantly different from control.

Discussion.—This study failed to support the conclusion that real-time monitoring and display of patient status and subprocess interval times decreases the overall total emergency department length of stay.

The length of the current use of the display, and the features included in the software show that this system used input from but one person and did not involve the participation of caregivers, as is standard with the majority of proprietary packages available. It is possible that such a change would have made it possible to demonstrate an effect. Nonetheless, the fact that no study, including the present one, has demonstrated an effect on patient length of stay should be taken into account when evaluating proprietary patient tracking mechanisms for the emergency department.

Phase 2 of the Peer Review Organization VHA* Initiative to Decrease Events in Congestive Heart Failure Patients: Prevailing Practice Pattern in Connecticut

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New Britain General Hospital, New Britain, University of Connecticut Medical School, Farmington, Promina Health System, Atlanta, VHA SNE, Farmington

Objective.—To quantify the practice pattern of the management of congestive heart failure (CHF) patients in emergency departments.

Design.—Consecutive cohort study.

Setting.—Emergency departments at 10 acute-care hospitals in Connecticut.

Participants.—All consecutive emergency department patients presenting to 10 study hospitals during October 1994.

Outcome Measures.—Admit rate, ICU usage, 30-day return—z test comparison of proportions.

Results.—At the study hospitals 452 of 39,781 patients (1.1%) had CHF during the study month. Three-hundred and-fifty-two of the 452 patients (78%) were admitted to the hospital after their emergency department evaluation (range 65% to 98%). Thirty-three percent of the 352 CHF patients who were admitted were initially managed in the ICU (range 0% to 89%). Twenty-four of the 352 admitted patients (7%) were readmitted to the hospital within 30 days. One of the hospitals used an emergency department observation unit for the management of selected patients with CHF. During a 17-month period, 66 of 114 (57.9%) observed CHF patients avoided hospital admission.

Conclusions.—The prevailing practice pattern for management of patients who present to emergency departments with CHF is hospital admission. The next phase of the study will investigate the feasibility of improving utilization of resources and quality of care by the use of techniques such as emergency department observation units.

Charges for CHF patients managed in the observation unit were significantly lower than for admitted CHF patients with one to two day length of stay ($1,462 *vs* $4,482, $P<.01$).

*Volunteer Hospitals of America

Assessment of the New EMT™ Endotracheal Tube in Dogs

SCOTT W. JOLIN, M.D., MARK KIESSLING, P.A., AND JOHN SCHRIVER, M.D.
Yale University School of Medicine

Objectives.—The EMT™ endotracheal tube has a sideport with a separate lumen for medication administration. The objectives of this study are to assess the physiologic effects of epinephrine, and the lung distribution of dye, administered through the sideport as compared to through the lumen in dogs.

Methods.—Ten mongrel dogs were administered the standard ACLS dose of epinephrine through the tube lumen and the sideport. The dogs were equally randomized as to the order of route of administration and were allowed to return to physiologic baseline between doses. Pulse rate, systolic blood pressure, cardiac output, and arterial oxygen concentration were measured. Next, the dogs were randomized to receive a dose of dye either through the lumen or sideport. A thoracotomy was performed and the trachea and lungs were excised. The extent of distribution was estimated.

Results.—Analysis with the Student's t test revealed no significant difference in the above physiologic parameters between treatment groups. Also, no significant difference in pulmonary dye distribution was observed.

Conclusion.—Although medication administration through the sideport of the EMT™ tube is much more easily accomplished and affords no interruption in ventilation, there is no difference in pharmacologic effects of epinephrine or distribution of dye.

Medicare Expenditures on Unsuccessful Resuscitations

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Background.—Numerous studies have shown the futility of continued emergency department resuscitative efforts for victims of out-of-hospital cardiac arrest when prehospital resuscitation has failed. Nevertheless, such patients continue to arrive to the emergency department, straining resources. To assess the economic consequences, we determined the Medicare expenditures for resuscitative efforts on victims of atraumatic, out-of-hospital cardiac arrest who are subsequently pronounced dead in the emergency department.

Methods.—Chart review of patients pronounced dead in the emergency department of an urban teaching hospital with 55,000 adult visits, during the calendar year 1995. Selected patients were Medicare recipients (age >65 years) with atraumatic out-of-hospital arrests, transported to the emergency department by paramedic EMS crews.

Results.—One-hundred-and-one cases met inclusion criteria and had Medicare claims on file for the date of death. Ambulance service payments ranged from $173 to $391 (mean $283). Professional fee payments for physician services rendered ranged from $8 to $160 (mean $72). Payments for Medicare Part B totaled $35,891: $355.36 per patient. Payments for Medicare Part A totaled $45,759: $435.80 per patient.

Conclusions.—Failed out-of-hospital resuscitation for Medicare patients is associated with a poor outcome and high cost. Termination of these efforts in the prehospital arena is unlikely to affect outcome, and would result in considerable cost savings on physician and hospital facility charges. Compassionate protocols that recognize these principles should be developed and implemented.

Bedside Doppler Identification of Lower Extremity Deep Venous Thrombosis

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Deep venous thrombosis (DVT) of the lower extremities accounts for 600,000 hospitalizations in the United States each year.[1] The current standard for diagnosis of DVT is duplex ultrasonography, a noninvasive test which has shown to have both high sensitivity and specificity. However, this tool is unavailable in a majority of hospitals during 76% of realtime (based on a 40-hour work week). Management strategies of nighttime and weekends include hospitalization and anticoagulation, incurring cost and possible danger to the patient until a proper diagnostic study can be obtained. Of these diagnostic studies, as many as 70% have been shown to be negative for DVT.[2] Many studies have looked at clinical examination and alternate diagnostic tools. One other author has compared hand-held Doppler ultrasound to venography, but to date no one has compared hand-held ultrasound to the current diagnostic standard of duplex ultrasound.[3]

We performed a pilot study comparing hand-held Doppler ultrasonography to duplex ultrasonography on 25 patients who were getting sent by the emergency department attending physician to the radiology department for duplex evaluation. Of these 25 patients, four were diagnosed with proximal lower extremity DVT by duplex ultrasonography, and 21 were found to be free of DVT. Of the positive hand-held tests, three were true-positive, and four were false-positive. Of the negative hand-held tests, one was false negative, and 17 were true negative. These data produce a sensitivity of 75%, a specificity of 81%, a positive predictive value of 43%, and a negative predictive value of 94%.

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Emergency Physician Utilization of Lumbosacral Spine Radiographs: Comparison with Selective Ordering Criteria

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University of Connecticut Integrated Residency in Emergency Medicine, John Dempsey Hospital

Purpose.—To determine the extent to which emergency physicians utilize plain radiographs of the lumbosacral spine in evaluating patients with low back pain. To compare the actual utilization of radiographs to selective ordering criteria published by Deyo et al in 1986.

Methods.—All patients discharged from a university hospital emergency department between 1 April 1995 and 31 September 1995 with a diagnosis of low back pain were identified retrospectively by their ICD-9 discharge code. Patients were excluded if medical records were unavailable or if chart review revealed that the patient had been coded for low back pain inappropriately. A radiograph was considered appropriate by Deyo's criteria if one or more of the following were present: trauma, history of cancer, positive neurologic findings, age over 50 years, symptoms for more than four weeks, history of chronic steroids, workers compensation case, history of drug use, unexplained fever or weight loss.

Results.—Two-hundred-sixty-four patients were diagnosed with low back pain during the study period. Sixty-six patients were excluded for the reasons cited above, leaving a study population of 198. Seventeen percent of patients received radiographs (34/198), of these 18% (6/34) were positive. Thirty six percent of total patients (71/198) met criteria for radiographs, of these only 42% (30/71) actually had a radiograph done. Among patients who received radiographs, 88% (30/34) were appropriate under the Deyo criteria. In addition, 25% of patients who did not get a radiograph (41/164) met one or more criteria. Of patients who met criteria but did not get a radiograph, the most common indications were trauma and age >50 years.

Conclusions.—Emergency physicians are already highly selective in ordering radiographs of the lumbar spine. Strict adherence to the Deyo criteria would have resulted in more than a doubling of the number of radiographs ordered.

Clinical Benchmarking is an Effective Tool to Improve Emergency Department Care

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Introduction.—The care of hospitalized, community-acquired pneumonia patients (DRG 089) was identified as an opportunity for improvement. It was hypothesized that the care these patients received in the emergency department had a significant impact on length of stay and mortality and that a multidisciplinary effort using clinical benchmarking could improve the clinical outcomes for this population of patients.

Methods.—Risk-adjusted mortality and length-of-stay data for all participating hospitals in Connecticut was obtained from the CHIME database for FY93 for DRG 089. Processes of care at three similar benchmark institutions where the length of stay and mortality rates were significantly better were reviewed by a multidisciplinary team. This was compared with hospital specific data abstracted from 200 consecutive charts of patients admitted with a principle diagnosis of community acquired pneumonia. A series of potentially significant differences in care were identified as promoting improved outcome. This work was translated into a series of recommendations which were implemented in March 1994.

Recommendations included:

- Improved identification and prioritization of patients presenting with signs and symptoms suggestive of pneumonia.
- Expedited handling of patients in radiology and early review of radiographs.
- Standardization of initial workup and development of order sets for this presumptive diagnosis.
- Interdepartmental consensus on appropriate empiric antibiotic choice, and agreement that initial antibiotic administration is the responsibility of the emergency physician.

- Development of a four-hour window for the administration of the first dose of antibiotic.
- Development of quality measures to assess the implementation of the recommendations and impact of the key measures of length of stay and mortality.

Results.—Length of stay decreased from 11.8 in FY93 to 9.32 in FY94 and 6.56 in FY95. Initial observed mortality in 1993 was 19.1 compared to a predicted rate of 15.0. This severity adjusted rate decreased to 8.6 in FY94. The nonseverity adjusted rate for FY95 was 7.1. Review of quality measures verified that triage nurses could consistently identify the majority of patients who would be discharged with a diagnosis of pneumonia and that diagnostic workup and initiation of antibiotic therapy could be accomplished within a four-hour window in the emergency department.

Conclusion.—Clinical benchmarking appears to be a usable tool by emergency department's who wish to improve the quality of care for their patients. Changes in the emergency department management of inpatients with a diagnosis of pneumonia appears to impact the subsequent hospitalization both in length of stay and mortality.

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Oral Ganciclovir: Role in Maintenance Therapy for CMV Retinitis in AIDS Patients

ROBERT C. OWENS, JR., PHARM.D., AND JACK W. ROSS, M.D.

Introduction

GANCICLOVIR (Cytovene®, Syntex), an acyclic nucleoside analogue antiviral agent, is structurally similar to acyclovir, and demonstrates good *in vitro* and *in vivo* activity against the herpes viruses including human cytomegalovirus (CMV).[1-5] Intravenous therapies have been traditionally employed for the life-long treatment of CMV infection in patients with the acquired immunodeficiency syndrome (AIDS). Despite initial reports of low oral bioavailability, oral ganciclovir capsules were approved by the Food and Drug Administration for the chronic maintenance treatment of CMV retinitis in immunocompromised patients. Orally administered doses (1,000 mg every 8 hours) result in serum concentration values that inhibit most clinical strains of CMV.[4-6] Recently, published controlled clinical trials have confirmed the *in vitro* success and have reported oral ganciclovir to be an effective alternative to intravenous ganciclovir for the maintenance therapy of CMV retinitis.[7,8]

A problematic issue with oral ganciclovir is the acquisition price. In the midst of fiscal restraint, managers must reduce departmental budgets. The addition of a drug that will increase the pharmacy's budget must be considered carefully in view of the overall hospital budget.

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This series on Drug Information Updates from Hartford Hospital are provided by the Drug Information Center, Department of Pharmacy Services, Hartford Hospital. Editors: Moses Sing Sum Chow, Pharm.D., and Robert A. Quercia, M.S., R.Ph. Editorial Board: D. Drezner, M.D., G. Gousse, M.S., R. Quintiliani, M.D., J. Laut, M.D., and Robert C. Owens, Jr., Pharm.D.

The economic disadvantages associated with drug acquisition cost may be offset by benefits to the patient. Patient care advantages expected with oral ganciclovir therapy include effective outpatient maintenance treatment of CMV retinitis, ease of administration leading to increased compliance, and the elimination of intravenous catheters.

CMV Infection

CMV in patients with AIDS is the most common cause of opportunistic viral infections, and remains a significant cause of morbidity and mortality.[9-12] Serologic indication of CMV is found in approximately 100% of HIV-positive homosexual men; at autopsy, 90% of patients with AIDS have evidence of CMV.[11,13] Normally a benign virus in the immunocompetent host, CMV is a significant pathogen in the immunocompromised patient with cell-mediated immunodeficiency. With HIV infection, CMV has been shown to produce a variety of clinical syndromes including retinitis, esophagitis, pneumonia, colitis, encephalitis, and adrenalitis.[14,15]

CMV retinitis is the most common manifestation of CMV infection with AIDS, developing in 15% to 45% of patients.[10,16] This infection of the retina occurs secondarily to the hematogenous spread of the virus, and therefore systemic treatment is indicated for the treatment of this seemingly localized disease. The clinical course of CMV retinitis involves progressive visual field impairment resulting ultimately in complete and permanent blindness.[16]

The current standard of treatment for CMV retinitis in patients with AIDS is ganciclovir or foscarnet, which are equivalent for both the acute and maintenance treatments.[17] A large randomized clinical trial has shown that patients who are treated adequately for CMV retinitis initially, will redevelop infection sooner if not maintained

on anti-CMV therapy.[9] Conceptually, the management of CMV retinitis in patients with AIDS has been compared to the therapeutic strategy for a responsive, although incurable malignancy.[14] The initial or induction period consists of aggressive intravenous antiviral therapy, followed by a reduction in dose to be continued indefinitely as maintenance therapy. Since treatment is considered to be lifelong, the measurement of successful therapy is the time to onset or to reappearance of active disease.

The recommended dose for CMV induction therapy is ganciclovir 5 mg/kg administered intravenously every 12 hours for 14 days. Subsequently, maintenance therapy must be initiated with a suitable treatment option such as intravenous ganciclovir 5 mg/kg given once daily, or as an alternative, oral ganciclovir 1,000 mg to be administered three times daily.

Pharmacokinetics

Following the administration of 500 mg and 2,000 mg doses, the mean time to peak concentrations were 2.1 and 2.9 hours, respectively. Mean peak serum ganciclovir concentrations following a single 1,000 mg (4x250 mg capsules) oral dose and after achieving steady state concentrations (1,000 mg every 8 hours) were 0.40 and 1.11 mg/L, respectively.[6] A mean peak serum concentration measured following a single 5 mg/kg intravenous dose was 8.27 mg/L, included for comparison purposes.[18] After an oral dose (1,000 mg), the oral bioavailability of ganciclovir was determined to be 4.5%.[6] The mean area under the curves (AUC_{0-24}) for repeated oral dosing (1,000 mg every 8 hours) and for the administration of 5 mg/kg intravenous doses given once daily were 15.4 and 21.4 mcg/h/mL, respectively.[18] Interestingly, although the peak concentrations observed following oral dosing were approximately eight-fold lower than the peak concentration achieved by intravenous administration, the area under the curve data for the oral regimen approached 70% of the total AUC for the intravenous regimen.[18] Serum concentration values following repeated oral dosing (1,000 mg every eight hours) were within range of the IC_{50} (inhibitory concentration 50%) for most clinical isolates of CMV *in vitro*.[4,6] Ganciclovir undergoes minimal metabolism and is excreted 99% unchanged renally, correlating positively with creatinine clearance.[19]

Clinical Trials

Recently published comparative studies have reported the safety and efficacy of oral ganciclovir in the maintenance treatment of CMV retinitis in patients with AIDS.[7,8] Drew and colleagues have published results from an open-label randomized study in patients with AIDS and recently diagnosed, stable CMV retinitis.[7] A total of 123 patients, followed for up to 20 weeks, were randomized to receive maintenance therapy with intravenous ganciclovir 5 mg/kg once daily (n=60), or oral ganciclovir 3,000 mg (total daily dose) (n=63). Progression of disease was assessed by photographs of the fundi taken every other week. The photographs were evaluated at the completion of the study by a blinded, experienced grader. Clinical response was reflected by the mean times to progression of retinitis based on photographic evaluation, and was similar in both groups: intravenous ganciclovir 62 days *vs* oral ganciclovir 57 days. Additional determinations, including survival, incidence of viral shedding, and changes in visual acuity, were similar in both groups.

The Oral Ganciclovir European and Australian Cooperative Study Group reported results from a 20-week, multicenter, open-label, randomized study involving 159 patients with stable CMV retinitis and AIDS.[8] Patients were randomized 2:1 to receive maintenance therapy with either oral ganciclovir 500 mg six times each day (n=112), or intravenous ganciclovir 5 mg/kg per day (n=47). Clinical efficacy was determined by investigator-blinded photographic evaluation of the fundus. The mean times to progression for both treatment groups were comparable: 51 days for oral ganciclovir *vs* 62 days for intravenous ganciclovir.

Tolerability

Safety experience with oral ganciclovir in AIDS patients has been assessed in several clinical trials.[6-8] Results of controlled comparative studies demonstrate the improved safety of oral ganciclovir maintenance compared to intravenous ganciclovir maintenance.[7,8] Both studies utilized ganciclovir orally at 3,000 mg/day, and intravenously at 5mg/kg/day. Neutropenia, defined as an absolute neutrophil count <500/uL, occurred more commonly in the intravenous groups: 37% and 23%, compared to the oral treatment groups: 24% and 14%. The incidence of sepsis was significantly increased in the groups receiving intravenous dosing: 19% and 8.5%, compared to those receiving oral treatment: 8% and 3%. Catheter-related complications occured four times more frequently with intravenous maintenance than with oral treatment. Diarrhea was common to both treatment groups, occurring in nearly one-third to one-half of all patients, however, it is difficult to determine cause (drug *vs* advanced illness). Anemia, thrombocytopenia, and nausea were observed in both treatment groups.

Usual Dosage and Treatment Costs

Oral ganciclovir is available as a 250 mg capsule, and the usual maintenance dose is 1,000 mg (4x250 mg capsules) administered three times daily. The average wholesale price for one month of maintenance treatment is $1,404. The average wholesale price for one month of maintenance treatment with intravenous ganciclovir (5mg/kg/day using an typical weight of 75 kg for 30 days) is $1,044, a difference of $360 a month.

Conclusion

CMV retinitis typically occurs later in the course of AIDS. Results from controlled comparative studies have demonstrated the efficacy and safety of oral ganciclovir as a comparable alternative to intravenously administered options for the maintenance treatment of CMV retinitis in patients with AIDS. With oral treatment available, it is possible to maintain outpatient treatment of this sight-threatening infection, and to avoid inpatient hospital costs. Associated advantages with oral ganciclovir include: a route of administration conducive to increased compliance, effective outpatient treatment (reduction in hospital length of stay and identified complications), and the elimination or minimization of complications associated with intravenous medication administration.

The acquisition cost of oral ganciclovir is relatively high, and considering the current fiscal position of health-care institutions in the 1990s, the addition of an expensive treatment alternative to the arsenal of existing anti-infectives will predictively provoke scrutiny by formulary management reviewers. It is necessary to avoid tunnel vision during the review process and recognize that expenses extend beyond the surface of purchase costs. The relatively high drug acquisition cost of ganciclovir capsules may be justified when consideration is given to the advantages provided by an oral treatment alternative available to patients requiring life-long anti-CMV treatment. Programs for tracking the outpatient use of oral ganciclovir may permit a properly constructed economic analysis to be performed, and suggest means for reducing overall hospital costs.

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epitome

i-'pit-ə-mē\ *n* [L, fr. Gk *epitomē*, fr. *epitemnein* to cut sho
fr. *epi-* + *temnein* to cut — more at TOME] (1520) **1 a** :
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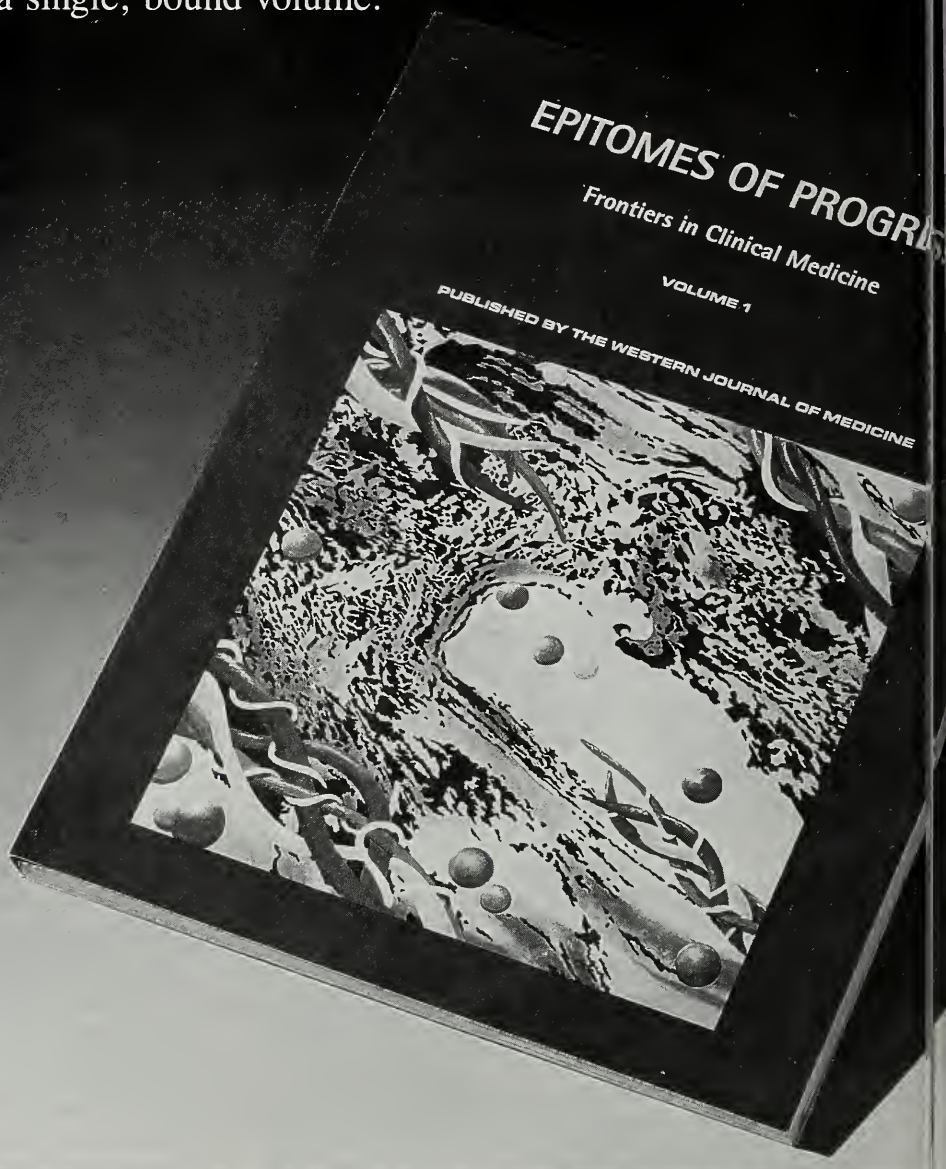

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Important Advances in Clinical Medicine

Radiology

James M. Halls, M.D., and David Larson, M.D., Section Editors

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in radiology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Radiology of the California Medical Association, and the summaries were prepared under the direction of James M. Halls, M.D., David Larson, M.D., and the panel.

Percutaneous Core Biopsy of the Breast

CURRENT options for the tissue diagnosis of nonpalpable breast lesions detected by mammography are needle localization with surgical excision, percutaneous fine-needle aspiration (FNA), and percutaneous core biopsy (PCB). Needle placement for all three methods may be guided by mammography using stereotactic techniques or by ultrasonography using direct visualization. Percutaneous core biopsy has recently emerged as the technique of choice for many patients.

Core biopsy tissue specimens are obtained by using a specially designed 14-gauge biopsy needle matched with an automated biopsy gun. When the gun is fired, a set of springs drives an inner needle forward 23 mm, exposing a 17-mm tissue slot at the tip. A second set of springs immediately drives an outer cutting needle over the tissue slot, trapping a core of breast tissue in the inner needle. In most instances, five core tissue specimens are obtained for histologic diagnosis.

Most centers use dedicated stereotactic mammography equipment with a specifically designed table to guide needle placement for PCB. The patient lies prone with her breast suspended through a hole in the table and compressed by the mammography unit beneath the table. The x-ray tube is moved 15 degrees to both right and left to obtain stereotactic views. Digital mammography devices display images electronically within a few seconds rather than the several minutes required for film. A computer that uses the principles of triangulation calculates the location and depth of the target lesion identified by the operator. A radiologist positions the needle using the computer-generated coordinates. Visualization is adequate for biopsy of most breast masses and microcalcifications. The core specimen is radiographed to confirm the removal of microcalcifications. Ultrasonography may be used to guide the biopsy of any mass that can be visualized sonographically. Most microcalcifications are not identified by ultrasound, however, so sonographic guidance cannot be used for a biopsy.

The advantages of PCB include highly accurate tissue diagnosis, the provision of enough tissue to allow the diagnosis of invasive carcinoma in most cases as well as to do estrogen-receptor analysis and flow cytometry, cost lower than surgical biopsy, and superior patient acceptance. Several series involving a combined total of 1,899 biopsies reported the agreement of the results of PCB with those of surgical biopsies in 90% to 99% of cases when a 14-gauge needle was used and at least five core specimens were obtained. Whereas FNA is limited to cytologic

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diagnosis and cannot be used to differentiate invasive from noninvasive carcinoma, core biopsy accurately predicts the presence of invasion in 98% of cases and the absence of invasion in 80% of cases. Estrogen- and progesterone-receptor data and flow cytometry studies, performed on core specimens but not possible with FNA, are used to direct patient treatment without surgical biopsy. Inadequate tissue specimens are rare (<1%) compared with the 20% inadequate specimen rate reported for FNA. Direct savings in the cost of PCB compared with surgical biopsy have been calculated at $893 to $2,000 per case. This cost savings is particularly important considering that only about 25% of biopsies of lesions detected by mammography are malignant.

Patient acceptance is high because PCB is performed as an outpatient procedure under local anesthesia, removes a minimum of breast tissue, and leaves little or no discernible deformity or scar. Complications are rare (less than 0.2%) and consist of hematoma and infection, with one reported case of tumor seeding of the needle track. Minor bruising around the biopsy site is common but self-limited. The prone biopsy position virtually eliminates the vasovagal reactions that are common with FNA and needle localizations done in the upright position.

The limitations of PCB include the expense and the limited availability of stereotactic core biopsy mammography units, the inability to target some lesions, and the inability of some patients to tolerate the prone position. Centers must have a sufficient volume of biopsies to justify the expense of a single-purpose stereotactic unit, so access to this technique is not yet universally available, although mobile units are in use.

Lesions near the chest wall or in the subareolar cone of breast tissue may be difficult to target. If a patient's breast compresses to less than 2 cm, the 23-mm excursion of the needle must start outside the breast. Ultrasonographic guidance is an effective alternative guidance method in these cases, provided that the lesion can be visualized. Candidates for PCB are patients with a mammographically detected lesion judged to be at high suspicion (70% risk) or moderate to low suspicion (10% to 20% risk) of breast carcinoma. Lesions assessed to be probably benign (less than 2% risk) are best observed mammographically, unless patient anxiety is high.

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Current Status of Thrombolysis

ARTERIAL thromboembolism is a well-recognized cause of major morbidity and sometimes death. Until recently, the only treatment was surgical: amputation, vascular reconstruction, vascular bypass grafting, and Fogarty balloon embolectomy. With the development of thrombolytic pharmacologic agents, a less invasive method has become available. The first widely used agent, streptokinase, although inexpensive, was prone to hemorrhagic complication, was antigenic with frequent reactions, and could not be administered repeatedly at short intervals. More recently developed agents include tissue plasminogen activator and urokinase. The use of urokinase is associated with few hemorrhagic complications, it is not antigenic, and it is therefore generally accepted as the current agent of choice.

Efficacy has notably improved, and indications have been expanded for thrombolysis. In one method, instead of intravenous administration or simply leaving a catheter dripping urokinase at the leading edge of a thrombosed vessel, a specially designed catheter with many tiny side holes is advanced through a thrombosed segment of vessel. With the end hole occluded by a guide wire, rapid pulses of concentrated urokinase (25,000 units per ml) are delivered with a 1-ml tuberculin syringe. This creates a high-pressure spray through the tiny side slits, directly delivering thrombolytic agent deeply into the clot while macerating it. This advance has led to a pronounced improvement in technical success, fewer hemorrhagic complications, and greatly shortened thrombolytic times. Procedures can now be measured in minutes to hours rather than hours to days.

Another important advance has been the addition of heparin to the urokinase mixture to impede concurrent rethrombosis. A major advantage to this radiologic approach is that frequently an underlying lesion (that is, stenosis) will be uncovered that predisposes the vessel or bypass graft to thrombose. At the same setting, this stenosis can be definitively treated by balloon angioplasty or stenting with generally excellent results.

Modern thrombolysis techniques have also been a boon for hemodialysis patients. It has enabled vascular access sites to be preserved as long as possible, which is critically important for these patients.

In summary, interventional radiologist-directed thrombolysis should now be considered as a first line of therapy in patients with the following disorders: acute thrombosis of peripheral arteries and bypass grafts, including cases of acute critical ischemia; acute embolism of peripheral arteries or bypass grafts; subacute or chronic arterial or graft thrombosis; thrombosed hemodialysis access grafts; venous thrombosis involving veins proximal to dialysis

grafts, thoracic outlet syndromes, or portal veins or stents after transjugular intrahepatic portosystemic shunting procedures.

In experienced hands, a technical success rate of about 95% can be expected. The complication rate is about 8%, most of which are groin hematomas or distal emboli requiring minimal management. Life-threatening complications are rare but include intracranial or gastrointestinal bleeding. Close monitoring of clotting factors is therefore required. Exciting new applications now undergoing clinical trials include emergency thrombolytic therapy for pulmonary embolus and acute thromboembolic cerebrovascular stroke.

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Magnetic Resonance Imaging, Positron Emission Tomography, and Single-Photon-Emission Computed Tomography in Epilepsy

RECENT technologic advances in imaging have launched us into an era of improved diagnosis and localization of the pathologic substrate of epilepsy, the epileptogenic zone. Published articles cannot substantiate the use of a solitary modality in investigating a patient with seizures. Because magnetic resonance imaging (MRI), positron emission tomography (PET), and single-photon-emission computed tomography (SPECT) measure different aspects of brain function and anatomy, including structure, metabolism, and blood flow, respectively, the three modalities are complementary; each makes a unique contribution to the investigation of patients' seizures.

Magnetic resonance imaging exceeds PET and SPECT imaging in its ability to show structural abnormalities. Reported sensitivity and specificity vary. In studies that report the surgical success of seizure control, sensitivities for diagnosis by MRI vary from 80% to 90% for sclerosis due to trauma, infection, or infarction; 90% to 95% for mesial-temporal sclerosis; 90% to 100% for neuronal migration disorder; and 100% for tumor or vascular malformation. High-resolution imaging with three-dimensional volume techniques and 1.5-mm contiguous slices has led to a better detection of cortical dysplasias, hamartomas, and other developmental abnormalities. Three-dimensional data are not necessarily viewed in three-dimensional format, but it allows reformatting of the images in any plane to facilitate distinguishing subtle gyral or cortical abnormalities from normal configurations and to compensate for malalignment of the patient.

For difficult cases in which the electroencephalographic data localize the seizures, but the MRI scan is normal, surface rendering of three-dimensional volume data obtained with MRI has helped radiologists to detect previously occult structural abnormalities. Mesial-temporal sclerosis, the most common cause of temporal lobe epilepsy, is characterized by cell loss and astrogliosis that involves a small portion of the hippocampus. Before advances in spatial resolution, early studies reported MRI to be poorly sensitive to the changes of mesial-temporal sclerosis. The demonstration of atrophy and increased signal in a temporal lobe with high-resolution MRI scans now has a high correlation with successful postsurgical seizure control. Volumetric analysis of MRI images has further improved the sensitivity of MRI in the diagnosis of mesial-temporal sclerosis. Side-to-side differences detected with magnetic resonance-based hippocampal volumetry correlates with cell loss quantified at histology. When electroencephalographic evidence of the start of a unilateral temporal lobe seizure is concordant with predominantly unilateral temporal lobe atrophy by MRI volumetric analysis, there is a greater than 90% chance of an excellent surgical outcome compared with 50% surgical success when volumetric evidence for unilateral atrophy is absent on MRI. The identification of a lesion on MRI in extratemporal areas also correlates with successful postsurgical seizure control.

Functional MRI uses ultrafast scanning techniques to scan patients while they are doing a task that is known to activate specific cortical regions, for example, the sensorimotor cortex. The technique is used to define the relationship of an epileptogenic pathologic substrate (such as tumor) to functionally eloquent cortex before surgical resection and thereby to avoid unacceptable postsurgical deficits.

The structural abnormalities seen with MRI correlate highly with the epileptogenic zone, but are not definitive. Therefore, MRI cannot be used alone. The epileptogenic zone is highly likely to be within a zone of altered metabolism or blood flow as seen with PET and SPECT, respectively. Both modalities have a relatively high sensitivity—PET, 70% to 80% for interictal scans; SPECT, 73% and 97% for peri-ictal and ictal scans, respectively—and moderate specificity for the diagnosis of temporal lobe epilepsy. Lower sensitivities are seen in patients with extratemporal seizures. Although metabolism and blood

flow increase during ictal events and decrease interictally, the detection of metabolic changes by PET with the use of fludeoxyglucose F 18 is known to be more sensitive. Although the spatial resolution for modern clinical PET scanners is typically 5 to 7 mm, the added advantages of wider availability, reduced cost, and greater feasibility of ictal scanning with SPECT after administering hexamethylpropyleneamine oxime (HMPAO) make this modality the more practical tool. Typical resolution for a modern three-head SPECT camera is 6 to 8 mm. Truly ictal studies are possible with HMPAO-SPECT studies because there is rapid uptake of the radiotracer but little washout, so the functional image represents activity during the time of administration and remains bound to the brain for several hours, which facilitates administering the radiotracer at ictus and scanning as long as four hours later. Seizure localization is most reliable when the radiotracer is administered early at the start of seizures and when a seizure does not propagate or does so minimally.

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Imaging of Appendicitis

MOST patients with acute appendicitis have classic clinical findings and are treated surgically. About a third of patients have atypical or confusing clinical findings and often require radiologic imaging. Abdominal radiographs and barium enema have been used in the past to aid in the diagnosis of acute appendicitis. Recently, the use of real-time ultrasonography and computed tomography (CT) has been advocated in patients with this possible diagnosis. The ultrasound examination involves graded compression in the right lower quadrant and especially in the area of maximal tenderness. Because of advances in technology and familiarization with expected sonographic findings, a normal appendix is frequently visualized, excluding the diagnosis of appendicitis. Diagnostic criteria for acute appendicitis in both children and adults include a distended appendix that is greater than 6 mm in diameter, lacks compressibility and peristalsis, and is constant in shape. Findings that are strongly suggestive include pericecal inflammation or abscess. Visualization of an appendicolith increases the specificity. In cases of appendiceal perforation, the appendix itself may be difficult, if not impossible, to visualize. A pericecal loculated fluid collection suggests perforation, whereas free intraperitoneal fluid is not a predictor of perforation.

With color Doppler ultrasonography, increased blood flow can be seen in areas of inflammation. Although this technique can increase observer confidence, it does not increase the sensitivity in detecting acute appendicitis. Recent studies have shown the use of sonography for the diagnosis of appendicitis to have a sensitivity of 76% to 100%, a specificity of 89% to 97%, and an accuracy of 83% to 97%. The ultrasound diagnosis of appendicitis is somewhat limited by the presence of obesity, ascites, and severe abdominal pain and can be more difficult if an appendix is retrocecal. Ultrasonography, however, is useful in evaluating the abdomen and pelvis for other disease if scanning of the right lower quadrant is not diagnostic for appendicitis. In children, other possible disorders that can be revealed with ultrasonography include mesenteric adenitis, ileitis, intussusception, Crohn's disease, Burkitt's lymphoma, foreign body, and neutropenic colitis. Computed tomography has also been used to evaluate atypical clinical findings of appendicitis and can be highly specific even without the use of intravenous or oral contrast media.

Computed tomographic criteria include the visualization of an abnormal appendix with fat stranding in the pericecal area or an appendicolith with a right lower quadrant abscess or phlegmon. The sensitivity, specificity, and accuracy for the CT diagnosis of acute appendicitis range from 87% to 98%, 83% to 97%, and 83% to 97%, respectively. Computed tomography can be used to detect complications of appendicitis such as hepatic abscess, small bowel obstruction, and mesenteric venous thrombosis and to evaluate concurrent disorders. It is also useful in the guidance of percutaneous appendiceal abscess drainage procedures. Although there is a small false-negative and false-positive rate for the diagnosis of appendicitis using either ultrasonography or CT, both modalities can be extremely useful. Ultrasonography may be most beneficial in children and young women because of the lack of ionizing irradiation, lower cost, and positive predictive value. Equipment is portable if necessary. In women of childbearing age, graded compression ultrasonography in conjunction with an endovaginal ultrasonogram is useful for evaluating acute gynecologic disorders. Computed tomography is advantageous in that it is tolerated by sick patients, is not operator-dependent, and the results are not affected by the amount of bowel gas or abdominal pain.

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Spiral and Ultrafast Computed Tomography for Noninvasive Cardiac Imaging in Children

CONGENITAL heart disease is a serious health problem in the United States, affecting about eight of 1,000 newborns. With the recent dramatic improvements in postoperative survival of infants with even the most serious and complex congenital cardiac malformations, emphasis has been placed on improving cardiac function, neurologic outcome, and the quality of life. Imaging studies play an important role in the management of these patients.

During the past decade, the need for cardiac catheterization with projectional angiocardiography has decreased with the use of less invasive cross-sectional imaging techniques such as echocardiography and magnetic resonance imaging. Computed tomography (CT) combines high spatial and contrast resolution with tomographic imaging, eliminating the superimposition of complex cardiac anatomy and surrounding lung and bony chest wall. The recent development of spiral and ultrafast (electron beam) CT techniques has extended its application to cardiovascular imaging (CT angiocardiography) with less motion artifact due to heartbeat and respirations. In adult abdominal and peripheral vascular disease, CT angiography has yielded results comparable to those of projectional angiography, with less radiation exposure, reduced requirements for contrast material, and no need for invasive catheterization of the vascular system. In the chest, CT angiography is most useful in the diagnosis of pulmonary embolism and in congenital heart disease, where there is a need for exactly delineating complex cardiovascular anatomy.

In infants and children, because of their small size, the entire thorax can be covered with spiral CT in 20 to 30 seconds during peak contrast enhancement given through a peripheral vein. Motion is further reduced by having older cooperative children hold their breath during the scan. Young children can be scanned successfully during quiet respiration, and sedation is less frequently needed because of the rapid acquisition time of the CT data. Imaging data are initially reconstructed as axial slices, familiar from conventional CT. Because the data are collected from a large volume of tissue rather than a slice at a time, they can be subsequently reconstructed and viewed on a computer work station from different angles in user-selected cross sectional planes and three-dimensional renditions best suited to display complex cardiovascular relationships, without the need to administer additional contrast media.

Respiratory and cardiac motion can be further suppressed by means of ultrafast (electron beam) scanning. Slice acquisition time is about 100 milliseconds, and, when using the dynamic imaging mode, the images are virtually motion-free even in dyspneic or crying children. Multislice bolus tracking (flow) techniques can be used to visualize hemodynamic events in real time and to calculate shunt fractions. Cardiac gating is used to link image acquisition to events in the cardiac cycle, allowing the reconstruction of multislice cine sequences, which are used to evaluate regional ventricular wall motion and to calculate functional indices—systolic and diastolic ventricular volumes, cardiac output, and ejection fraction. Computed tomographic angiocardiography provides valuable anatomic information in three dimensions regarding the size and structure of cardiac chambers, the caliber of pulmonary arteries and aorta, septal defects, the connection between ventricles and great vessels, the compression of airways by vascular structures, and position and patency of shunts and stents. In most cases, the image information is analogous or even superior to that provided by conventional projectional angiocardiography. Computed tomography uses less contrast material and radiation dose than angiography, which often requires administering multiple doses and biplane filming in various projections.

Although cardiac catheterization is still required for percutaneous interventions—balloon dilatation, stent placement, and embolization—and it is the only test to measure intracardiac and intravascular pressure curves and oxygen saturation, electron-beam CT can also provide detailed functional information, as mentioned earlier.

Emerging indications for cardiac CT are as follows: possible aortic coarctation; preoperative evaluation of pulmonary vascularity in patients with cyanotic heart disease who are being considered for palliative shunt placement; unifocalization of aortopulmonary collaterals or complete repair; assessment of complex postoperative anatomy; and the visualization of airway compression by vascular rings, slings, dilated vessels, and shunts. If cardiac catheterization is still required to further assess cardiac function and to guide endovascular intervention, the performance of cardiac CT on the day before catheterization substantially reduces the number of administrations and projections, the amount of contrast material required, and the procedure time, which should lead to savings in radiation dose and costs. Close cooperation between radiologists and pediatric cardiologists is required, especially in the user interactive three-dimensional rendering and

interpretation of the CT data. Noninvasive high-resolution "four-dimensional" cardiac imaging with CT has now become a reality, and its more general application in multidisciplinary cardiovascular research and treatment centers should have an important influence on patient management and outcome.

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Doppler Ultrasonography of Transjugular Intrahepatic Portosystemic Shunts

THE transjugular intrahepatic portosystemic shunt (TIPS) procedure is a nonoperative treatment option for managing variceal hemorrhage from portal hypertension. In this percutaneous procedure, an expandable metallic stent is placed in the liver to create a channel between a hepatic vein and a portal vein. Its creation has been shown to be feasible and effective, and it has become an accepted method for treating patients with portal hypertension and acute variceal bleeding. These shunts can become stenotic or occluded, however. Because the likelihood of shunt complications increases with length of time since insertion and the risk of recurrent variceal bleeding is directly related to shunt patency, a noninvasive, widely available, and relatively inexpensive means for assessing shunt function is of great importance.

Sonography is a valuable diagnostic tool in the noninvasive evaluation of hepatic parenchymal disease and hepatic vasculature. With the use of Doppler sonography, functional hemodynamic information regarding vascular patency, flow direction, and flow patterns can be obtained. Doppler sonography has been used to evaluate conventional, surgically created portosystemic shunts, and recent reports have shown this technique to be of value in demonstrating changes in hepatic hemodynamics after TIPS placement. The intrahepatic location of the TIPS makes it amenable to sonographic assessment. On gray-scale sonographic imaging, the walls of the stent are seen as highly echogenic parallel lines. Sonographic protocol includes spectral and color Doppler insonation of the main and intraparenchymal right and left portal veins, the TIPS stent, and the hepatic veins. The shunt is imaged along its long axis, and the maximum flow velocity within the TIPS is measured. The peak flow velocity by Doppler ultrasonography within a patent TIPS ranges from 50 to 270 cm per second.

Doppler sonography demonstrates TIPS flow and detects thrombosis. The absence of detectable flow within a TIPS indicates shunt thrombosis. Several Doppler sonographic variables have been studied in an effort to investigate which changes are most indicative of shunt dysfunction and, in particular, of TIPS stenosis. The variables that have been used include portal vein flow velocity and portal blood flow, maximum flow velocity within the shunt, the direction of flow within the intrahepatic portal venous branches, temporal change in peak stent velocity, and the direction of flow in the draining hepatic vein.

Reduced maximum flow velocities within a TIPS, measured in the intrahepatic portion of the stent, suggest stenoses that most often occur downstream, at the hepatic venous end of the shunt, or in the draining hepatic vein. Doppler measurement of a maximum flow velocity within the TIPS of 50 cm per second or less is a useful and suggestive indication of shunt stenosis.

Routinely doing baseline postprocedure and follow-up Doppler sonographic studies in patients with TIPS aids in screening for shunt complications and in selecting patients who will benefit from therapeutic intervention, including revising stenotic shunts. Although long-term complications are known to occur, TIPS function can be maintained in most patients by careful surveillance and periodic percutaneous angiographic intervention when indicated. The long-term clinical effect of routine screening by Doppler ultrasonography is not yet known, but the early detection and prompt revision of occluded or tightly stenotic shunts will likely decrease the frequency of recurrent variceal bleeding.

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Spiral Computed Tomography and Magnetic Resonance Imaging in the Detection of Pulmonary Emboli

PULMONARY embolism following lower extremity deep venous thrombosis is the third most common cardiovascular disease. The initial assessment of pulmonary embolism begins with a high index of suspicion. This is difficult because pulmonary emboli often present with nonspecific chest radiographs and normal arterial gas measurements and electrocardiograms. The current imaging workup of pulmonary embolism includes varying combinations of peripheral venous ultrasonography, ventilation-perfusion scanning, and pulmonary angiography.

Ventilation-perfusion scanning is perhaps the best known tool to aid in the diagnosis of pulmonary embolism. This is only an indirect test for pulmonary embolism that uses multiple scintigraphic criteria to arrive at a probability or likelihood for pulmonary embolism, rather than direct visualization. A normal scan virtually excludes the diagnosis whereas a low-probability scan, combined with a low pretest probability, lowers the likelihood of pulmonary embolus enough to preclude the use of angiography or anticoagulation in most patients. When a high-probability scan is coupled with a high pretest probability, the likelihood of pulmonary embolism being present exceeds 95%.

Unfortunately, most patients do not fall into these diagnostic categories, where pulmonary embolus can be reliably confirmed or excluded. (This remains true despite the recent revision of the Prospective Investigation of Pulmonary Embolism Diagnosis [PIOPED] criterion that broadens the definition of a low-probability scan.) This unreliability of ventilation-perfusion scanning in most clinical situations, combined with the perceived cost and morbidity of pulmonary angiography, has helped spur the recent interest in the development and application of new imaging techniques.

Spiral computed tomography (CT), which is becoming widely available, can now directly visualize pulmonary emboli noninvasively. Conventional CT requires relatively long scan times that, combined with respiratory motion, create artifacts that severely limit its usefulness as a screening tool for pulmonary embolism. Spiral or helical CT acquires images as a volume (cylinder) of data rather than a slice at a time as with conventional CT scanning. This volume can be acquired in a single breath, thereby diminishing motion artifact. The images are viewed as slices taken from this volume, and if these slices are overlapped, other types of artifact (volume averaging) are diminished.

Spiral CT for pulmonary emboli is done with the administration of 100 to 150 ml of a contrast medium intravenously through a power injector. It is given at 3 to 4 mL per second, which requires good peripheral venous access. During the contrast infusion, the scanner acquires one or two volumes of data, which requires either a 12- to 15-second or a 24- to 30-second breath hold, respectively. Timing of the contrast bolus with respect to the scanning is crucial. To select the best timing for the study, a small bolus of contrast medium may be administered, with preliminary scanning done through the main pulmonary arteries. This step can be particularly helpful in patients with pulmonary hypertension and other cardiac diseases who might have abnormal circulation times.

In many recent comparisons with angiography, spiral CT done in this manner has shown specificity and sensitivity of 90% or more for main, lobar, and segmental pulmonary emboli. The diagnosis of segmental pulmonary emboli, however, requires optimal technique and may necessitate slicing the imaged volume in planes along the axes of pulmonary vessels that run obliquely through the lung. An excellent knowledge of hilar and pulmonary vascular anatomy is also important so that false-positive and false-negative diagnoses are avoided. Hilar nodes, congestive heart failure with perivascular edema, and partial opacification of pulmonary veins can all simulate filling defects and are possible sources of false-positive interpretations.

Because of these problems, spiral CT may fail to detect small emboli. Even with an optimal technique and image reconstructions, the accuracy of spiral CT for the detection of pulmonary emboli beyond the segmental level is less than that of conventional pulmonary angiography. Isolated small emboli are probably rare, however. In the PIOPED trials, a solitary pulmonary embolus distal to a segmental level occurred in only 14 of 251 patients.

Recent technologic advances have also allowed the pulmonary vasculature to be visualized with magnetic resonance imaging (MRI). This is achieved using faster pulse sequences with shorter echo times, body coils, and by timing image acquisition to specific phases in the cardiac and respiratory cycle (cardiac and respiratory gating). The advantage of MRI in the evaluation of thromboembolic disease is twofold. First, it can provide three-dimensional images of the pulmonary vascular bed in multiple projections without requiring the administration of iodinated contrast materials. Concurrent peripheral MRI venography can also be done to evaluate for the presence of deep venous thrombi. The ability to evaluate for both pulmonary embolism and deep venous thrombosis in less than an hour makes MRI an attractive modality in the diagnosis of thromboembolic disease. Unfortunately, the hardware and software necessary to produce clinically useful images of the pulmonary vascular tree are

not yet widely available or widely used. Spiral CT is more widely available and can better evaluate the lung parenchyma and mediastinum as well as the pulmonary vasculature. Therefore, it can detect other disease processes that could mimic pulmonary embolism on ventilation-perfusion scans.

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Magnetic Resonance Imaging of Radiographically Occult Bony Trauma

SUBSTANTIAL bony injuries related to acute trauma or repetitive stress may not be detected on plain radiographs. Magnetic resonance imaging (MRI) has proved to be a powerful tool to assess these radiographically occult injuries, primarily because of its ability to show associated changes in the underlying marrow.

Trabecular bone is commonly injured during athletic activities. "Bone bruises" may be the sole cause for a patient's symptoms, and occasionally may result in adverse long-term sequalae if not treated appropriately. Plain radiographs are notoriously insensitive for detecting trabecular injuries because the overlying cortex is often intact. Because of its exquisite soft tissue contrast, MRI is able to depict the associated marrow hemorrhage or edema. Its ability to display concomitant soft tissue injuries is one advantage of this technique compared with radionuclide bone scanning.

Nondisplaced fractures may also be missed on plain films. Occult hip fractures in elderly patients present a particular diagnostic challenge because a radionuclide bone scan may be normal for the first few days after injury in these patients. Again, because of its sensitivity for detecting associated marrow changes, MRI can rapidly detect occult fractures with a high degree of accuracy. Similarly, a normal MRI virtually excludes serious bony injury, thereby allowing efficient patient evaluation. If a limited protocol is used, this technique can be cost-competitive with other modalities such as a radionuclide bone scan, often with greater specificity. Stress fractures are becoming more common in our increasingly active society. Rapid, accurate diagnosis is important because clinical assessment can be difficult, and biopsy in the early stages of stress injury may result in a mistaken diagnosis of neoplasm due to the presence of immature cells related to the reparative process. Plain radiographs are insensitive in these early stages, but MRI is able to detect the associated marrow changes and sometimes a distinct fracture line as well, before the typical periosteal reaction or fracture is detectable on plain films. As such, it is a useful diagnostic adjunct when a radionuclide bone scan is indeterminate.

Although the use of MRI has come under scrutiny because of current economic forces, it may prove to be the most cost-effective means for arriving at a rapid and accurate diagnosis in a patient with a radiographically occult bony injury.

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Magnetic Resonance Imaging of the Breast

MAGNETIC resonance (MR) mammography has been under technical and clinical evaluation for more than 14 years. Although initial data clearly indicate the suitability of MR imaging of the female breast, the use of MR mammography in evaluating breast disease has yet to be fully realized. Current applications are limited to the diagnosis of cancer in selected patients, the staging of known breast cancer, and the evaluation of silicone implant integrity.

Magnetic resonance mammography has undergone extensive evaluation as a noninvasive means for distinguishing between benign and malignant breast lesions identified by conventional mammography. Among the currently available imaging modalities—mammography, sonography, thermography, and computed tomography (CT)—only the use of mammography has been able to show a substantial reduction in the mortality associated with breast cancer, particularly for women older than 50 years. By using repetitive MR imaging of the same slices before and at short intervals after the administration of a contrast medium, known as "dynamic MR mammography," an 88% to 100% sensitivity in differentiating benign

from malignant lesions has been reported. In the absence of contrast enhancement, a carcinoma can be excluded with a high degree of certainty.

The greatest enthusiasm for MR mammography in evaluating breast disease is as a screening tool for the large number of women with mammographically dense breasts and a relatively increased risk for breast cancer due to a strong family history of the disease. Mammographically dense breasts make the exclusion of small tumors difficult. This is particularly worrisome in high-risk patients. The characteristic changes of dynamic MR mammography are capable of discriminating these lesions. Moreover, the characteristic changes are known to apply only to active tumor regions and not to necrotic or fibrotic regions.

Magnetic resonance imaging of the breast in patients with silicone prostheses has proved to be highly accurate in identifying the common complications associated with the implants and in characterizing concurrent disease. A silicone breast implant has a uniform signal intensity that is easily distinguished from pectoralis muscle and breast parenchyma. This permits obvious positioning of the breast implant in relation to adjacent anatomic structures. Ruptured and intact implants are immediately differentiated with a high degree of specificity using MR mammography. Moreover, when implants are found to be ruptured, MR mammography is able to demonstrate whether the silicone material remains within the fibrous surgical capsule or has extravasated into surrounding tissue. In patients with trauma, MR mammography can distinguish a hematoma in the breast parenchyma from silicone that has extravasated into the surrounding tissues.

Although there is a need to identify in which women there is a high risk of breast cancer developing, the widespread use of MR mammography as a screening tool for the disease is not economically feasible because of its high cost. Cost analysis indicates that MR mammography is useful as a diagnostic adjunct to conventional breast imaging modalities that are difficult to interpret due to mammographically dense breasts, surgical scarring, or the presence of silicone implants.

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Radiosurgery

EACH year more than 100,000 people in the United States are diagnosed with a benign or malignant brain neoplasm. Recent media reports focusing on radiosurgery, a relatively new treatment designed to halt neoplastic growth in the central nervous system, have raised expectations for cure or improved local control over standard treatments. Although not all patients are candidates for radiosurgery, an understanding of its mechanics, indications, selection factors, results, and cost is helpful when responding to patient inquiries or referring patients to radiosurgical facilities.

Radiosurgery, a noninvasive irradiation technique using stereotactic methods, is performed with narrow intersecting beams of one of three types of penetrating radiation: gamma rays produced by the decay of cobalt 60 in a Gamma knife (a specialized apparatus whose sole function is radiosurgery), x-rays produced in standard linear accelerators that have been modified to do radiosurgery, and charged particles such as protons or other ions produced by a cyclotron or synchrotron. No radiosurgical method currently has a clinically demonstrable advantage over another. Although there are a large number of linear accelerators in the United States, most patients are treated on Gamma knife machines. In each case, the intent is to produce cell death or blood vessel thrombosis of targeted tissue within a small, well-defined volume. Accurate targeting is required because the intense radiobiologic effects produced by a single high dose of radiation could result in radionecrosis of normal central nervous system (CNS) tissue. With current technology and commonly used doses, the risk of radionecrosis is often claimed to be less than 5% in many patients, but approaches 20% in patients with malignant gliomas.

The radiosurgical procedure involves a sequence of tasks: temporarily attaching a stereotactic frame to the patient's head, obtaining stereotactic radiologic images of the target and surrounding structures, delineating the target contour on the images, planning treatment by interactively displaying dose contours on computer monitor views of the images, positioning the frame with respect to the radiation beams, and irradiating the target in a single session. The entire process takes a day to do and requires a radiation oncologist, a neurosurgeon, a radiologist, a physicist, and a nurse; in some cases, such as those of children, an anesthesiologist may also be required. Patients are comfortable throughout the procedure, and most return to baseline activity in a day or two.

About 50,000 patients worldwide have been treated with radiosurgery, mostly in the past five years. About a third of these had arteriovenous malformations, a third

had benign tumors (such as acoustic neuroma and meningioma), and a third had malignant tumors (glioblastoma, astrocytoma, and metastatic tumors). Clinical reports show that patients selected for treatment should have good neurologic function and a radiologically well-defined target. Most important, the target should be small—usually less than a few centimeters in maximum dimension. For larger targets, it may be impossible to select a dose that provides both a high chance for cure and a low risk for complications. This inverse relationship of dose and volume is supported by clinical experience and radiobiologic theory. Because the target is small, previous irradiation is not a contraindication to radiosurgery.

Numerous retrospective studies have shown that about 35% of arteriovenous malformations selected for radiosurgery are no longer angiographically visible within a year and 85% within two years. Permanent neurologic complications attributable to radiosurgery occur in fewer than 5% of patients treated by experienced teams. These complications may take months or even years to develop, however. Angiographic resolution of the arteriovenous malformation after radiosurgery appears to be equivalent to that of complete surgical resection; in either case, the risk for hemorrhage is virtually zero. The advantage of radiosurgery is that it is noninvasive and requires minimal hospital stay compared with open surgery. On the other hand, protection from hemorrhage is delayed until the malformation is obliterated by radiosurgery, whereas total resection immediately eliminates the risk for hemorrhage. Many physicians think that small arteriovenous malformations in the brain stem or in other hard-to-reach areas are best treated by radiosurgery. For those located in other areas, the immediate surgical risks must be weighed against the risk of delayed hemorrhage during the latent interval after radiosurgery.

The intent of radiosurgery for benign and malignant tumors is to prevent progression of the radiologic abnormality rather than to cause its complete disappearance—which occasionally occurs, but requires a high radiation dose to achieve consistently. Thus, serial scans—at intervals that depend on the tumor type—following radiosurgery are required. About 90% of acoustic neuromas selected for radiosurgery are controlled (do not progress). In the past five years, recommended radiosurgical doses for acoustic neuromas have been reduced, and the risks of facial and trigeminal neuropathy have been greatly decreased. Retrospective data show, however, that patients with useful hearing on the affected side still have a substantial risk for hearing loss. Whether radiosurgery or traditional surgery is the better therapy for acoustic neuroma is a topic of lively debate, especially because at least transient symptoms may occur after radiosurgery. About 95% of meningiomas selected for radiosurgery are controlled.

The standard treatments of glioblastoma and anaplastic astrocytoma include surgical excision, radiotherapy, and chemotherapy, but recent randomized trial results show a survival benefit for those patients who also receive a brachytherapy boost (temporary implantation of highly active radioactive iodine seeds in removable plastic catheters). Because radiosurgery produces a dose distribution similar to that of brachytherapy, it is now offered atmany centers, either initially in conjunction with fractionated radiotherapy or as the only radiation procedure at recurrence. Several retrospective studies show that survival following radiosurgery is similar to that following brachytherapy, but this has not been confirmed in a randomized trial.

Brain metastases are usually well defined and noninfiltrative and therefore represent ideal radiosurgical targets. Retrospective studies show that the growth of targeted tumors is halted for six months in about 90% of cases and that patients then are more likely to die of systemic rather than CNS disease. Therefore, patients with CNS metastasis who derive the greatest benefit from radiosurgery are those who have no or minimal non-CNS metastases. Some studies show that radiosurgery may be useful for some patients with multiple CNS metastases, particularly if their primary disease is controlled and they have no evidence of non-CNS metastases. A current randomized trial should determine whether patients who receive radiosurgery at the time of diagnosis should also receive whole-brain radiotherapy.

Radiosurgery is appealing to patients because it is noninvasive and because the results of treatment compare favorably with those of alternative therapies. Although the typical cost per procedure of radiosurgery is greater than that of radiotherapy, it is less than that of an operation. Studies will help determine whether larger targets can be treated effectively and safely and whether radiosurgery results can be improved with radiosensitizers. In the future, we are likely to see radiosurgery techniques used at non-CNS anatomic sites.

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M.D. Health Plan has been through many changes in the past year. The merger with Health Systems International has allowed us many new and exciting opportunities, including a Personal Medical Management System:

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Breast Cancer Incidence and Mortality—United States, 1992

BREAST cancer is the most commonly diagnosed nondermatologic cancer and the second leading cause of cancer-related deaths among women in the United States.[1-3] In 1996, a total of 184,300 new cases of and 44,300 deaths from invasive breast cancer are projected among women.[3] To assess trends in incidence and death rates for breast cancer among U.S. women, CDC analyzed national incidence data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program[2] and death-certificate data from CDC's National Center for Health Statistics (NCHS).[4] This report presents incidence and death rates for breast cancer for 1992 (the most recent year for which SEER data were available) and summarizes trends in these rates for 1973-1992. Overall, these findings indicate that incidence rates for invasive breast cancer increased among women during 1973-1987 and stabilized during 1988-1992, while mortality rates remained stable during 1973-1988 and decreased during 1989-1992.

The incidence rate of breast cancer in the United States is estimated by using aggregate data reported by the SEER program, which includes a nonrandom sample of approximately 14% of the U.S. population.[2,5] Based on 1990 data from the Bureau of the Census, the demographic characteristics of persons included in SEER is representative of the total U.S. population for whites and blacks; in addition, persons included in SEER reflect the percentage of persons among the total U.S. population living below the poverty level* and the percentage of adults who graduated from high school.[5] However, a higher proportion of persons included in SEER resided in urban areas.[5] This analysis includes all cases of invasive breast cancer (International Classification of Diseases, for Oncology, codes C50.0-C50.9) registered in SEER. Annual incidence rates were computed for 1973-1992, and race- and age-specific average annual incidence rates were computed for the combined years of 1988-1992.

Decedents for which the underlying cause of death was breast cancer (International Classification of Diseases, Adapted, Ninth Revision, codes 174.0-174.9) were identified from public-use mortality data tapes.[4] Annual death rates were computed for 1973-1992, and race-specific average annual death rates by age and by state were computed for the combined years of 1988-1992.

Denominators for annual incidence and death rate calculations were derived from U.S. census population estimates. Rates were directly standardized to the age distribution of the 1970 U.S. population using five-year age groupings. Data are presented only for whites and blacks because numbers for other racial / ethnic groups were too small for meaningful analysis.

National Breast Cancer Awareness Month—October 1996

October is National Breast Cancer Awareness Month. Each year, CDC; other government agencies; and major nonprofit, national cancer organizations cosponsor this month, which is dedicated to increasing awareness about the importance of early detection of breast cancer. Through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), CDC supports early detection of breast and cervical cancers through cooperative agreements with health departments in all 50 states, the District of Columbia, five territories, and 13 American Indian / Alaskan Native organizations. Additional information about Breast Cancer Awareness Month and the NBCCEDP is available from CDC's Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, (770) 488-4751, and from the World Wide Web (http://www.cdc.gov/nccdphp/dcpc/dcpchome.htm).

*Poverty statistics are based on a definition originated by the Social Security Administration in 1964 that was subsequently modified by federal interagency committees in 1969 and 1980 and prescribed by the Office of Management and Budget as the standard to be used by federal agencies for statistical purposes.

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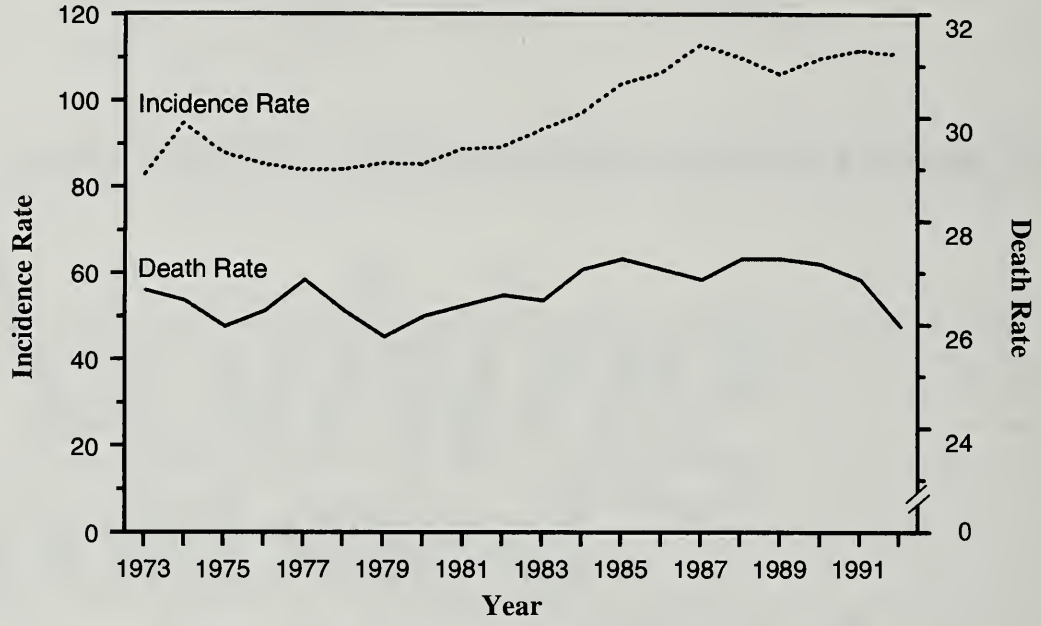
Figure 1.—Age-adjusted incidence and death rates* for invasive breast cancer†—United States, 1973-1992.



*Per 100,000 women. Standardized to the age distribution of the 1970 U.S. population.

†Cases of invasive breast cancer (*International Classification of Diseases, for Oncology*, codes C50.0-C50.9) were registered in SEER. Decedents for which the underlying cause of death was breast cancer (*International Classification of Disease, Adapted, Ninth Revision,* codes 174.0-174.9) were identified from public-use mortality data tapes.[4]

Source: National Cancer Institute's, Surveillance, Epidemiology, and End Results program.

Breast Cancer Incidence

In 1992, the overall age-adjusted incidence rate for breast cancer was 110.6 per 100,000 women. The rate for white women (113.1) was higher than that for black women (101.0). During 1973-1992, the overall incidence rate increased from 82.5 to 110.6: rates increased steadily during 1973-1987, and stabilized during 1988-1992 (Fig. 1). During 1988-1992, incidence rates increased directly with age until age 75-79 years for whites and age 80-84 years for blacks[2]; the rates for whites and blacks were similar for women aged <45 years, but for women aged >45 years, the rate was higher for whites than for blacks. During 1973-1992, race-specific rates varied: for white women, the age-adjusted rate increased 34% (from 84.3 to 113.1) and, for black women, increased 47% (from 68.7 to 101.0).[2]

Breast Cancer Mortality

In 1992, a total of 43,063 U.S. women died from breast cancer. The death rate was 26.2 per 100,000 women. During 1973-1992, the overall death rate varied; rates were stable during 1973-1988, before decreasing during 1989-1992 (Fig. 1). During 19881992, the overall ratio of black-to-white death rates was 1.2 (Table 1). Rates increased directly with age.[2] For women aged <70 years, the rate was higher for blacks than for whites; for women aged ≥70 years, the rate was higher for whites than for blacks. During this period, race-specific rates varied. During 1989-1992, the rate for white women decreased 6% (from 27.5 to 26.0) and, for black women, increased 3% (from 30.4 to 31.2).[2] During 1988-1992, the state-specific age-adjusted death rate ranged from 18.2 in Hawaii to 35.3 in the District of Columbia (Table 1).

Reported by: Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The findings in this report indicate that incidence rates for breast cancer increased 34% during 1973-1992. The increase and later stabilization of incidence rates during the 1980s is most likely related to increased use of breast cancer screening methods[6]—particularly mammography and clinical breast examination, which enable earlier diagnosis of the disease.[3] The decrease in breast cancer death rates during 1989-1992 may reflect a combination of factors, including earlier diagnosis and improved treatment. For example, screening mammography and clinical breast examination are effective methods for reducing breast cancer mortality among women aged ≥50 years.[7] Survival from breast cancer increases when the disease is diagnosed at earlier stages, and from 1974-1976 to 1986-1991, the survival rate for invasive breast cancer increased substantially.[2] Differences in the race-specific and state-specific incidence and death rates for breast cancer during 1973-1992 may reflect

Table 1.—Number of deaths from breast cancer* and age-adjusted death rate†, by state and race§—United States,1988-1992.

	No. deaths			Rate			Black-to-white
White		Black	Total	White	Black	Total	ratio
Alabama	2,440	871	**3,318**	23.5¶	31.5	**25.2**	1.3
Alaska	158	**	**190**	26.3	**	**23.6**	**
Arizona	2,609	**	**2,707**	24.6	**	**24.0¶**	**
Arkansas	1,668	298	**1,972**	22.9¶	30.3	**23.8¶**	1.3
California	18,702	1,579	**21,121**	26.9	32.1	**26.0¶**	1.2
Colorado	2,169	**	**2,260**	24.9	**	**24.7**	**
Connecticut	2.897	181	**3,089**	26.7	30.0	**26.9**	1.1
Delaware	593	**	**692**	32.0	**	**32.5**	**
District of Columbia	197	509	**712**	29.3	38.0	**35.3¶**	1.3
Florida	11,859	1,158	**13,044**	25.2¶	29.0	**25,5¶**	1.2
Georgia	3,419	1,116	**4,547**	24.3¶	27.4	**24.9¶**	1.1
Hawaii	177	**	**546**	25.4	**	**18,2¶**	**
Idaho	712	**	**717**	25.0	**	**24.7**	**
Illinois	9,457	1,353	**10,853**	29.3¶	32.8	**29.5¶**	1.1
Indiana	4,513	365	**4,888**	26.7	33.9	**27.2**	1.3
Iowa	2,726	**	**2,756**	26.5	**	**26.4**	**
Kansas	2,078	**	**2,191**	25.7	**	**25.8**	**
Kentucky	2,823	231	**3,062**	25.4	33.0	**25.8**	1.3
Louisiana	2,324	1,046	**3,386**	25.0	33.2	**27.2**	1.3
Maine	1,110	**	**1,116**	26.7	**	**26.7**	**
Maryland	3,188	859	**4,073**	28.0	32.0	**28.6**	1.1
Massachusetts	6,110	201	**6,335**	30.1	31.2	**30.0¶**	1.0
Michigan	6,959	1,071	**8,070**	27.5	33.7	**28.1**	1.2
Minnesota	3,686	**	**3,744**	27.1	**	**26.9**	**
Mississippi	1,290	631	**1,922**	22.7	27.8	**24.2¶**	1.2
Missouri	4,271	449	**4,734**	26.1	32.0	**26.6**	1.2
Montana	626	**	**646**	24.8	**	**24.8**	**
Nebraska	1,431	**	**1,463**	26.9	**	**26.8**	**
Nevada	803	**	**861**	26.7	**	**26.3**	**
New Hampshire	1,021	**	**1,025**	30.8	**	**30.7**	**
NewJersey	7,474	894	**8,423**	31.5¶	34.7	**31.6¶**	1.1
New Mexico	963	**	**1,000**	24.6	**	**23.6**	**
NewYork	16,211	2,292	**18,643**	31.1¶	29.6	**30.5¶**	1.0
North Carolina	4,307	1,160	**5,518**	25.3	30.5	**26.3**	1.2
North Dakota	564	**	**575**	27.3	**	**27.2**	**
Ohio	9,404	987	**10,409**	28.3	32.2	**28.6**	1.1
Oklahoma	2,259	136	**2,468**	24.9	24.7	**24.0¶**	1.0
Oregon	2,339	**	**2,389**	25.7	**	**25.4**	**
Pennsylvania	12,081	1,089	**13,200**	29.2¶	34.8	**29.6¶**	1.2
Rhode Island	1,103	**	**1,141**	31.5	**	**31.6**	**
South Carolina1	995	745	**2,744**	25.5	29.0	**26.3**	1.1
South Dakota	606	**	**624**	26.5	**	**26.3**	**
Tennessee	3,358	688	**4,056**	24.1¶	34.2	**25.4**	1.4
Texas	9,638	1,412	**11,100**	23.5¶	30.3	**24.0¶**	1.3
Utah	883	**	**897**	23.3	**	**23.2**	**
Vermont	494	**	**494**	28.0	**	**27.9**	**
Virginia	4,035	983	**5,057**	27.2	33.4	**27.9**	1.2
Washington	3,713	**	**3,851**	27.1	**	**26.5**	**
West Virginia	1,564	**	**1,631**	24.7	**	**24.9**	**
Wisconsin	4,312	130	**4,455**	27.3	33.1	**27.3**	1.2
Wyoming	320	**	**324**	25.9	**	**25.6**	**
Total	**189,639**	**23,114**	**215,039**	**27.0**	**31.3**	**27.1**	**1.2**

*Decedents for which the underlying cause of death was breast cancer (*International Classification of Diseases, Adapted, Ninth Revision*, codes 174.0-174.9) were identified from public-use mortality data tapes.[4]

†Per 100,000 women. Adjusted to the age distribution of the 1970 U.S. population.

§Numbers for racial/ethnic groups other than black and white were too small for meaningful analysis. However, all totals include numbers for other races.

¶The difference between the state-specific rate and the corresponding U.S. rate is statistically significant ($P<0.0002$, Bonferroni-adjusted).

**These data were excluded because the annual average number of persons in the denominator was <75,000.

differences in factors such as socioeconomic status, access to and delivery of medical care, and the prevalence of specific risks for disease.[1,5,8] For example, women in minority populations are less likely than white women to be screened for breast cancer.[9] Although socioeconomic and risk-factor data were not analyzed in this report, the findings underscore the need for further characterization of the burden of cancer for U.S. women in racial/ethnic, geographic, and other subgroups.

Early detection and appropriate treatment are essential to reducing the burden of breast cancer in the United States. CDC's National Breast and Cervical Cancer Early Detection Program provides early detection screening and referral services for cancers of the breast and cervix among older women who have low incomes or are uninsured, underinsured, or in a racial/ethnic minority. Additional effors by this program and health-care professionals are needed to ensure that every U.S. woman at risk for breast cancer receives breast cancer screening, prompt follow-up, and assurance that tests are conducted in accordance with current federal quality standards.

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The Rationale for Naltrexone Therapy as an Alternative to Methadone Treatment for Opiate Addiction

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METHADONE substitution has been the mainstay for pharmacological therapy of opiate addiction. The intent is to "normalize" the life of the addicted individual by providing a legal, longer acting, orally administered substitute for heroin or other opiates. However, these patients are encumbered with having to present themselves to a licensed facility for the distribution of methadone on a daily or near daily basis. In addition to having to wait for a "slot" to open in an approved methadone distribution center (there are between 750,000 and 2,000,000 persons addicted to opiates in the United States, about 130,000 enrolled in methadone programs, and more than 250,000 actively seeking methadone treatment), a mother addicted to methadone cannot so much as take her children on a camping trip if it involves travel away from the source of distribution. Furthermore, methadone is much more costly than other available treatments. A recent quarterly publication of National Institute of Drug Abuse states that six months of methadone therapy costs approximately $1,750, or about $292 per month.[1] In Connecticut in 1995, the cost associated with each methadone "slot" was $90 per week, or about $390 per month.[2] These figures are two and three times, respectively, the cost of daily treatment with naltrexone, which retails for between $4.50 and $5.00 for a 50 mg tablet. Naltrexone, taken once a day, would cost between $130 and $150 per month. The cost savings of naltrexone over methadone are due to methadone being a scheduled narcotic that may only be distributed by licensed medical personnel in an approved facility, whereas naltrexone is a nonscheduled medication that may be purchased in any pharmacy in the same way a prescription antihypertensive medication would be purchased.

There are newer, safe, more humane, and compassionate techniques available today to detoxify someone from heroin onto naltrexone. Outpatient programs using naltrexone, clonidine, and other adjuvant medications successfully detoxify patients from heroin and convert them to naltrexone maintenance within a week.[3-7] One-day detoxification techniques using naltrexone in conjunction with general anesthesia have been used with great success.[8-13] Unlike traditional techniques of opiate-addiction therapy which leads to relapse rates of 85%,[1] naltrexone maintenance in conjunction with psychosocial support has yielded abstinence rates of 80% six months after detoxification as evidenced by negative urine samples.[14] Many providers of rapid opiate detoxification claim abstinence rates of 50% to 75%,[12,13] figures which the National Institute on Drug Abuse says are "believable."[15] In addition, these rapid outpatient detoxification programs are cost effective compared to inpatient methadone detoxification.

Many patients who become physically dependent upon methadone under medical supervision are unable to detoxify from methadone. Because methadone is more highly bound to tissue proteins than heroin, it accumulates in body tissues much more than heroin and has a longer plasma half-life.[16] It may indeed be more difficult to detoxify from methadone than from heroin.

Naltrexone is a pure opioid antagonist. Its effects on opioid receptors are dose dependent. At the recommended dose of 50 mg per day, it is theorized that naltrexone does not block the effects of naturally occurring endorphins, enkephalins, and the like. This dose, however, is enough

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to block effectively and competitively the effects of exogenously administered opioids such as heroin. This could be because the affinity of naturally occurring endogenous opioids for μ and other opioid receptors is greater than the affinity of exogenous opioids for the receptor. This makes sense because the endogenous endorphins are "exact fits" for the receptor, while exogenous opioids are less than perfect imitations. In fact, beta-endorphin is five to 15 times as potent as morphine.[17] Therefore, when receiving the dose of naltrexone appropriate for a particular patient, that individual should still experience the naturally produced "good feeling," while the effects of exogenous drugs are negated.

Down-regulation of central nervous system opioid receptors is a well- accepted mechanism for tolerance and is the cornerstone of opiate-addiction theory.[18] It is basic pharmacology, in general, that the body responds to exogenous receptor agonist administration by down-regulating the receptors, and likewise responds to exogenous receptor antagonists by up-regulation. These mechanisms have been clearly worked out for a whole host of medications, an example of which is beta-blockers and the "propranolol withdrawal syndrome." Recently, investigators have demonstrated that the decreased response to abused opiates is due to down-regulation, and that opioid antagonists such as naltrexone cause up-regulation.[19-21]

There are anecdotal reports of heroin users who have been treated with naltrexone who then relapse. Upon relapse, the injection of what would have been a usual and routine dose of heroin has resulted in drug overdose and death.[21] These anecdotal reports yield clinical evidence of the up-regulating effects of naltrexone. Yoburn et al in 1995 published an eloquent study which showed that "supersensitivity" to methadone, etorphine, fentanyl, meperidine, and oxycodone could be induced in mice by chronic naltrexone administration. After naltrexone, the potency of these narcotics increased 1.9 to 3.2 times pre-naltrexone values. They also showed that this supersensitivity was due to an increase in the number of μ, δ, and κ opioid receptors, and was not due to changes in the affinity of the receptors for the drugs.[23] Basic research supports the theory lent by anecdotal evidence that indeed, naltrexone causes up-regulation of opioid receptors.[24]

These findings are significant and support the assertion that naltrexone is a better treatment for heroin addiction than methadone. Chronic heroin abuse causes opioid receptor down-regulation. Methadone treatment following heroin abuse will serve to reinforce this down-regulation. Naltrexone, on the other hand, will have the opposite effect causing an up-regulation of those same receptors, creating a state more like that which existed prior to abusing heroin. In the Yorburn study, the mice were not previously "down-regulated" by chronic opioid administration. Therefore, when they were "up-regulated" by naltrexone administration, the number of receptors were increased as compared to a "normal" state creating "supersensitivity." In the case of methadone or heroin usage, the receptors are initially down-regulated prior to being up-regulated by naltrexone. In theory, the number of receptors after chronic opioid administration followed by naltrexone would be expected to result in a more "normal" state, as opposed to a "supersensitive" state.

The one stumbling block in converting patients to naltrexone maintenance has been the unpleasantness of the withdrawal symptoms precipitated by administering an opioid antagonist to someone who is physically dependent on exogenous opiates. Some treatments using clonidine and other adjuvants such as benzodiazepines have been used with some success. During most of these techniques, however, the patient still experiences some significant withdrawal signs and symptoms, and these patients are subject to drop out. For instance, when Azatian tried to replicate one such protocol, 91% of subjects left treatment against medical advice.[25] Even Kleber's 1987 study in which 86% successfully withdrew from opioids over a five-day period, concluded that an awake protocol using naltrexone over a few days was most effective only in cases of less severe withdrawal symptoms.[26] One promising technique that has been used with success is to administer the narcotic antagonist under general anesthesia, ameliorating the acute withdrawal response altogether. Upon emerging from anesthesia, the patient has already been detoxified, and naltrexone maintenance may be initiated immediately thereafter. No one drops out under general anesthesia!

Detoxification alone is not an end-all, be-all cure for any addiction. However, detoxification with naltrexone, in conjunction with psychosocial follow-up and naltrexone maintenance, has been shown to be promising therapy for opiate addiction. Naltrexone detoxification is cost competitive to detoxification using methadone. For instance, our fee of $2,500 at Nutmeg Intensive Rehabilitation, P.C. for our one-day Intensive Narcotic Detoxification^{SM} procedure compares favorably with $2,850 for a 10-day inpatient methadone detoxification.[15] It is noteworthy that in Connecticut, it is legislatively mandated that insurance carriers must provide for up to 45 days per year per patient of hospital-based care for chemical dependency. Some inpatient detoxification programs are significantly more expensive than $2,850. Intensive Narcotic Detoxification^{SM} also is cost-competitive to a five-day awake outpatient detoxification using clonidine and naltrexone which costs about $1,500.[15] IND^{SM} may be at least as cost effective because of the lower dropout rate using anesthesia. Without question IND^{SM} is easier to tolerate and may be the most humane and compassionate of the detoxification

techniques. Naltrexone maintenance is significantly less expensive to administer than is methadone maintenance (as referred to in the first paragraph of the manuscript). Both methods should be accompanied by the appropriate level of psychosocial support. Only naltrexone therapy offers a theoretically viable pharmacodynamic approach which may be the basis for rehabilitation through reversal of changes at the cellular level.

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Guest Editorial

The More the Merrier

Within the past several years, the structure of the average medical practice has radically changed. The era of the solo practitioner has ended in most urban areas of the country. Recently, individual and small groups of primary care physicians have joined forces to create large practices, often utilizing several practice sites. Some of these practices have been purchased by hospital- related business entities or by "for-profit" publicly traded corporations. It is not uncommon to find 20 or 30 physicians practicing in such an environment. Subspecialists have also merged their practices in order to form more effective bargaining agents for dealing with managed-care organizations. In addition to actual mergers, many practices have agreed to align their futures by forming both primary-care and subspecialty networks. Examples of this trend can be found in the city of New Haven, which has witnessed the acquisition of generalist practices by hospital associated ventures and the merger of several subspecialty practices, including gastroenterologists, orthopedists, pediatricians, and pulmonologists. Several horizontally integrated networks have formed as well, attempting to offer a broad panel of physicians and attractive financial arrangements to interested insurance carriers. The economic wisdom of network formation and merger appears to be sound. What is unclear, however, is whether individual physicians will thrive emotionally in these new settings in which the philosophy and governance of the practice becomes more and more diffuse.

In individual or small group practices, the philosophy and governance of the practice is a relatively simple matter. Small practices usually approach issues such as office policy, purchasing of equipment, and bill collection with relative ease. Likewise, decisions concerning financial remuneration, pension planning, and on-call scheduling are relatively simple to arrive at. With only two or three physicians making decisions, policy can often be determined quickly over lunch break. In such a setting, individual physicians feel more secure because they have a measure of direct control over their professional lives.

With the advent of the large group or horizontally integrated network, however, individual physicians have seen major erosion in their ability to affect the direction of their practice. No longer can decisions be made during lunch break. The democratic process requires that all members of the group share in decision making. However, assembling 10 or 20 members of a group in a given place at a specific time is not an easy task and even the simplest decisions are often delayed. In addition, the larger the group, the greater the chance that there will be disagreement on issues ranging from participation in a managed-care plan or the purchase of medical equipment to the formula for financial reimbursement of group members or the monetary contribution to the group's pension fund. The net effect of repeated restraints on an individual physician's options is to reduce that physician's satisfaction with the degree to which she controls the practice environment. This loss of control in personal direction, along with the obvious managed care-induced loss of control over many aspects of patient care, may produce devastating effects on the psyches of today's physicians.

I am unaware of any study which has investigated the long-range effects of this change in medical practice. I propose that the Connecticut State Medical Society consider a study of the effects of merger and network formation on the physicians of Connecticut. We need to evaluate whether there is, indeed, major economic benefit to be derived from these mergers and acquisitions. In addition, we need to learn whether there is an emotional cost associated with this recent trend of merger and network formation and, if there is, whether the "risk-benefit ratio" is in favor of continuing in this direction.

Frederick L. Sachs, M.D.
Associate Chief, Department of Medicine, and Associate Chief of Staff, Yale New Haven Hospital, Clinical Professor, Department of Internal Medicine, Yale School of Medicine

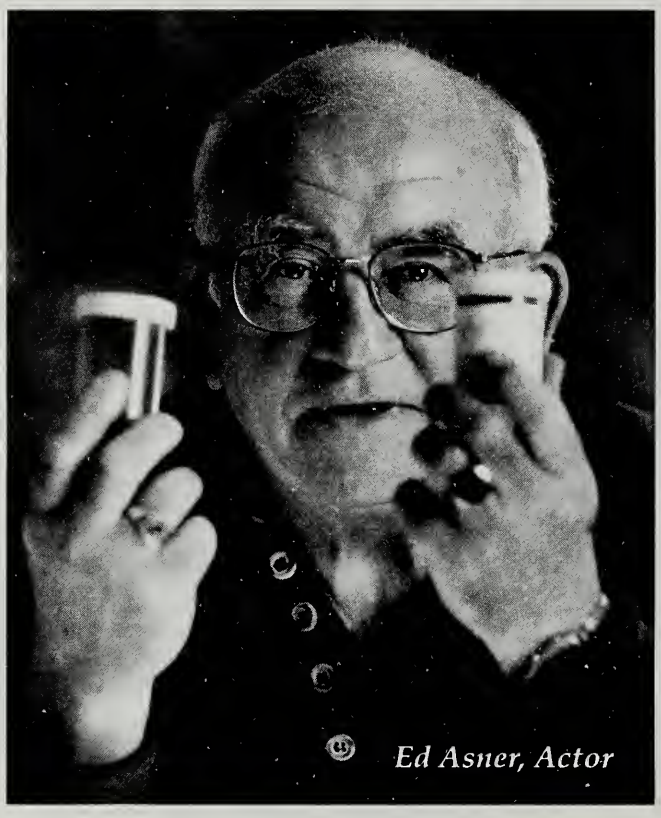
CSMS Launches Study of M.D. Practice Needs

Over the past few months, perhaps even as Dr. Sachs' perceptive guest editorial above was being written, the CSMS Council has considered and authorized a study of physicians' practice needs stemming from the rapid changes in health-care funding and organization. As has become apparent from the Society's ongoing legislative wars in Hartford in defense of physicians and their patients, many of our doctors may be in need of new services for organizing, networking, negotiating, data management, and yes, practice governance. It should not be necessary to sell one's practice to access such services in a changing market where today's verities can rapidly become tomorrow's mistakes.

It is in each patient's interest for us to help physicians keep themselves in the driver's seat, not only when it comes to clinical judgement and care, but also in the varied health-care delivery system settings in which patients and doctors must now navigate. The CSMS study will begin with an in-depth needs analysis of several dozen practices of varied types and locations, and an assessment of available resources for servicing these needs. Recommendations concerning appropriate roles for the Society will eventually follow for the Council's consideration.

Michael M. Deren, M.D., *President, Connecticut State Medical Society*

Attention: Physicians



Have your patients' medicines had a check-up?

Many of your patients take several different medicines every day. Separately each one works well. But if they take two or more different medicines in combination without checking with you to be sure they work safely together, they can sometimes be harmful...even dangerous.

The next time you prescribe a medicine, ask your patients:

"What other prescription and nonprescription medicines are you taking?"

YES! Please send me free information to use when talking with my patients about their multiple medicine use.

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A public service message from the National Council on Patient Information and Education (NCPIE) and the U.S. Administration on Aging

50 Years Ago
From *The Connecticut State Medical Journal*
November 1946

The Surgical Treatment of Congenital Heart Disease

Prepared at the request of the JOURNAL by Dr. Harris B. Shusnacker, Jr., associate professor of surgery, Yale School of Medicine.

Up until a few years ago no corrective surgery had been attempted in congenital heart disease. Patients suffering from such disorders were doomed to varying degrees of functional incapacity and to a shortened life expectancy. Therapy was limited to more or less unsatisfactory efforts to control the resultant functional difficulties associated with these malformations, such as heart failure, and the hypertension of coarctation. Largely due to the pioneer efforts of Gross with cases of patent ductus arteriosus, Blalock and Taussig with pulmonary stenosis and atresia, and Krafoord and Nylin, and Gross in coarctation of the aorta, operative techniques are now available which either result in cure or in marked functional improvement.

The operative treatment of patent ductus arteriosus is a relatively simple surgical procedure and is attended with an extraordinarily low mortality. The surgical procedures applicable to cases of reduced pulmonary blood flow and to coarctation of the aorta, though associated with definite risk, are nevertheless relatively safe operations considering the marked functional incapacity of the patients and their otherwise grave prognosis. No one who has not seen such patients before and after successful operative treatment can truly appreciate the improvement which can be achieved. Nothing in surgery is more satisfying than the accomplishment of such procedures.

The development of the operative treatment of these congenital heart disorders has necessarily imposed an additional obligation upon all those who have a part in the diagnosis of these conditions, for proper treatment is dependent upon precise diagnostic study. To be sure, the ordinary means of examination are sometimes sufficient. In certain cases, however, special study is necessary. In cyanotic heart disease due to reduced pulmonary blood flow, determination of oxygen content, capacity and saturation are helpful as well as carbon dioxide combining power and hematocrit. Routine roentgenographic examination is insufficient. The operator must know whether the aorta descends on the right or left, whether there is rotation or transposition of the heart. Fluoroscopic inspection of the lung fields for pulsations is essential. In certain cases cardiography after injection of opaque medium may prove helpful. Certain congenital lesions of the heart associated with cyanosis, such as the Eisenmenger syndrome, are sometimes hardly distinguishable on ordinary clinical grounds from cases of pulmonary or tricuspid stenosis or atresia. These cases in which the pulmonary blood flow is not significantly reduced are not amenable to the operation of Blalock and Taussig and must be recognized by direct study of pulmonary arterial pressure at operation if they are not recognized beforehand.

In this JOURNAL appears an excellent discussion of the technique of cardiovascular catheterization by Geiger, Anderson, Winkler and Kaplan. This method of study, introduced in this country largely through the efforts of Cournand and his associates and subsequently utilized extensively in several other clinics, is proving increasingly useful in the precise diagnosis of the congenital heart defects. It is helpful not only in establishing the presence of major cardiac defects amenable to surgery but also in the recognition of other abnormalities which cannot be treated surgically. Its safety is attested by the experience of Stead and Warren, who have met with no serious untoward effects in over 1,000 catheterizations. The procedure has apparently almost limitless potentialities. Bing, for example, working in Blalock's clinic, has with certain modifications been enabled by this method, in cases of congenital cyanotic heart disease, to estimate the pulmonary and systemic blood flow and the amount of collateral circulation to the lungs through other pathways than the pulmonary arteries. These studies are not only of clinical help. They are adding steadily to our fund of knowledge concerning heart defects and cardiovascular function. It is not without the realm of possibility that such information may lead in the future to improved application of the surgical methods now available, and to the development of new procedures for correction of other cardiac defects which at present cannot be treated by surgical means.

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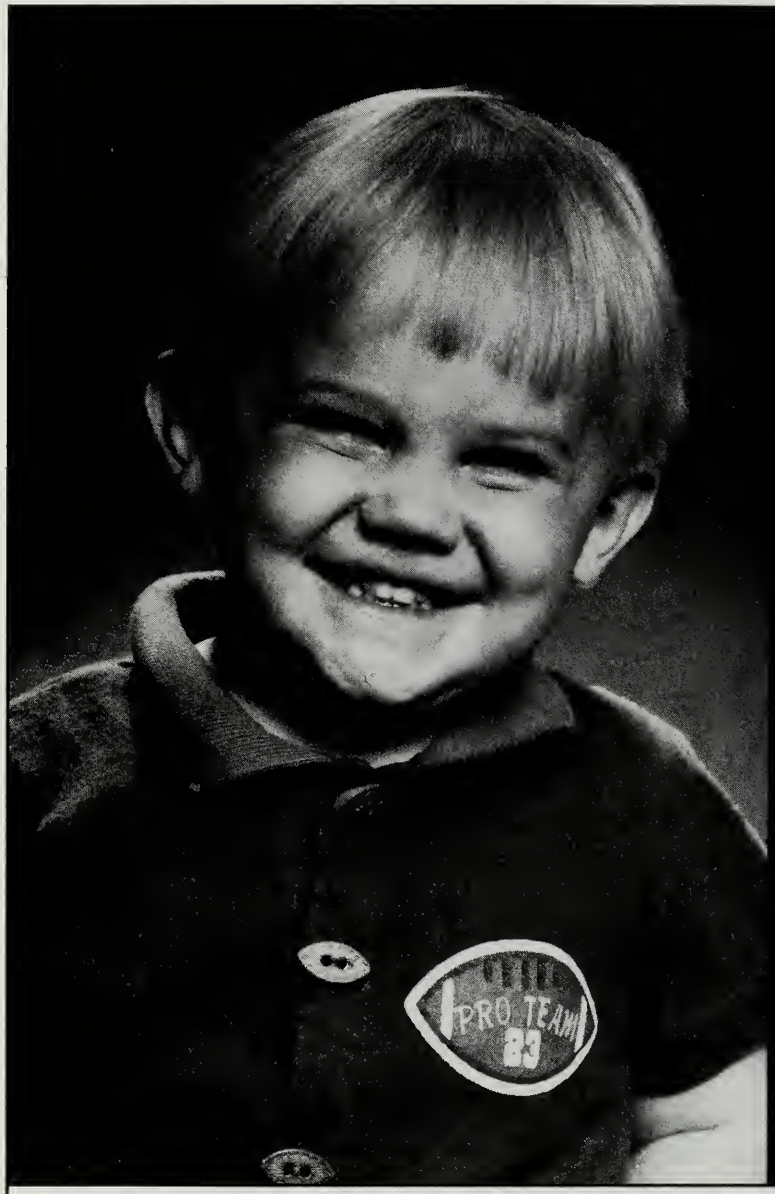

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THE PRESIDENT'S PAGE

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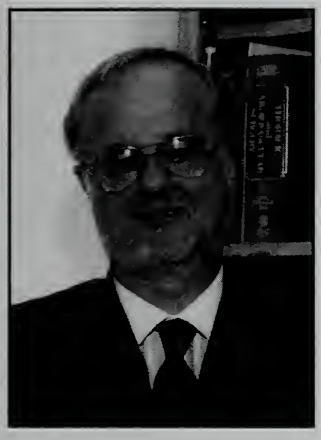

While waiting for a return phone call in my hospital doctors' mail room, I came across a medical legal throwaway journal* which had an interesting article in it. Basically, the article involved a denial of services by a managed-care company.

The case involved a patient with severe end-stage cardiac disease who was admitted to the hospital in congestive heart failure. It was the opinion of the treating cardiologist and cardiac surgeon that the patient had a terminal disease, and if action were not taken immediately he would die very shortly. Therefore, an emergency life-saving but experimental procedure was offered to the patient. This had to do with a mechanical heart. The medical director of the HMO managed-care company denied payment on the basis the procedure was experimental and not covered in the patient's contract. The treating physician rapidly appealed the decision which was also denied. Because the patient would die without a mechanical heart, the surgeon performed the artificial heart transplant.

The artificial heart was used as a "bridge" until a donor heart was available. A donor heart did rapidly become available, the mechanical heart was removed, and the human heart transplant was then put in place and the patient did well.

The patient and surgeon then appealed the case saying that unless the patient had had the bridge transplant the patient would have died, and, therefore, the procedure was warranted. The managed-care company denied payment on the basis of the patient's health-care contract which said experimental procedures such as artificial hearts would not be reimbursed. The case is on appeal and the final decision has not yet been reached in the court.

The issue here was that the managed-care company did not have to pay for life-saving therapy, that is to say, therapy without which the patient would have died. Their argument was that the patient had a choice of health-care plans, one of which was all encompassing and another of which was limited but less expensive and did not include experimental procedures. It is of note that in all likelihood the surgeon and the hospital would not receive payment from the insurance company for performing this procedure. The moral is that life-saving procedures will not be paid for by insurance companies if a provision against it is in the contract. This is especially true when patients have the choice of various plans within an insurance company, one of which encompasses experimental procedures and another one which is a low-cost plan that does not include experimental procedures.

As a result of this, insurance companies should be mandated to reveal all clauses within the contract so that patients are aware of what they are purchasing. This seems an unlikely scenario.

In a similar situation, a patient in our area received a large amount of publicity when he went to California for experimental therapy. The patient was infected with HIV and went to California to obtain a baboon bone marrow transplant. This is an experimental procedure for which insurance companies are not willing to pay. The procedure was done and the patient did well although the transplant was ultimately not successful.

Often, grants and research funds are used to pay for these experimental procedures. The obligation of managed-care companies to reimburse for this is unclear. Their policy on research has been one of resistance to pay. They appear willing to pay only for the bare minimum of health care. Such is their health-care policy for the 'nineties, which century is unclear.

Such circumstances lead one to feel that legislation should be in some way enacted both on a national and a local level to determine what experimental procedures have a high likelihood of success and which experimental procedures may simply not be useful. This is best determined by a panel of expert physicians who are familiar with the area under investigation. For example, a series of physicians from the NIH or the National Cancer Institute could set protocols which establish the criteria from experimental procedures and when these protocols are met the procedures should be paid for by the managed-care insurance company.

This would ensure that managed care paid its fair share of clinical medical research. It would also ensure that patients received appropriate procedures and that these were reimbursed by the health insurance company.

Michael M. Deren, M.D.
President

*Interactive Physician's Medical Law Letter

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Before you read this, take off all your clothes.

Now look in the mirror for signs of melanoma/skin cancer.

Notice any changes in the shape or color of your moles or freckles?

Do you have any new blemishes that are larger than 1/4-inch,

varied in color, irregular or asymmetrical in shape?

If so, you may have melanoma or another form of skin cancer and you should see a dermatologist. Left alone, melanoma will spread throughout your body and eventually kill you. Melanoma can be successfully cured if caught early.

Okay, you can put your clothes back on now.

Spot Melanoma/Skin Cancer Early.

AMERICAN ACADEMY OF DERMATOLOGY
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1938

Getting to the Heart of the Matter

ROBERT U. MASSEY, M.D.

> Igitur corde percusso sanguis multus fertur, venae elanguescunt, ... matura mors sequitur.
>
> Celsus, V, 26. 8.

"NOW when the heart is penetrated, much blood issues, the pulse fades away, ... death quickly follows." A Roman *medicus*, A. Cornelius Celsus, made this hardly original observation early in the first century. Aristotle had said the same thing over three centuries earlier, and before that Hippocrates is said to have written that "Penetrating wounds of the bladder, brain, heart, diaphragm, intestines, stomach or liver, are fatal." Until a century ago it was believed that even touching the myocardium would result in death. The great Theodor Billroth (1829-94) had written "The surgeon who ever attempts to stitch up a wound in the heart may be certain that he will lose all his colleagues' respect forever."

Just 100 years ago this fall, Ludwig Rehn, a surgeon at Frankfurt am Main, closed a knife wound in the right ventricle of Wilhelm Justus, who had been stabbed following a tavern brawl, and the victim recovered. A similar feat had been attempted at least twice before, once in September 1895 by a Norwegian surgeon, Cappelen, and again in June 1896 by an Italian surgeon, Guido Farina, but in each case the patient survived less than five days. Rehn's patient was still alive and well 10 years later. There had been rabbit experiments with cardiac wound closure in the 1880s and some dog experiments in 1895, but as far as I know, there had been no successful cardiac surgery on a human being before that dramatic September night in Frankfurt in 1896.

In 1942, my first year in medical school, I had the good fortune to watch the surgical closure of a patent ductus at the University Hospital in Ann Arbor, thanks to a fourth year medical student and good friend who was on his surgical rotation and managed to get me into the OR. As a medical intern during my required surgical rotation I scrubbed with Conrad Lam and held a retractor while he performed the first Taussig-Blalock procedure in Michigan on a young girl with tetrology of Fallot.

A year or so later I can recall exactly where I was when I heard the incredible news from a fellow resident about Dwight Harken's and Charles Bailey's successful *intracardiac* operations for mitral stenosis.

More than a decade after that, in 1959 in Atlantic City, Mason Sones presented his paper and showed slides or a movie of coronary artery catheterization and angiography at the Cleveland Clinic. Afterward he and I met for a beer and to talk about his amazing pictures and gossip about our years as residents together at the Henry Ford Hospital. That bar is as vivid in my mind as a color photograph, and so is a cocktail party in Albuquerque in December 1967 where a close friend and cardiologist asked me if I'd heard the news that a South African surgeon, Christiaan Barnard, had successfully transplanted the heart of a 24-year-old woman to a 53-year-old man. I hadn't, and I found it unbelievable. I had always thought that, the heart being such a wonderfully simple pump, as William Harvey had noted, a mechanical heart should be a relatively simple device—much easier to design than an artificial kidney.

My father had congenital heart disease, a left-to-right shunt which was thought to be a patent ductus, but which proved at autopsy to be a large interventricular septal defect. He died at age 52; that was in 1948, and although he had been cyanotic for years, he was minimally troubled by his badly designed heart until the last few years when he began to have recurrent pulmonary emboli. He was an engineer by education and never could understand, knowing the pressure differences, why a patent ductus should result in cyanosis; I recall him telling me that he must have a frog's heart, three chambers, and that accounted for his cyanosis. He was right. It had been my dream before he died that some bright engineer would come up with a workable mechanical heart; I never thought seriously of transplantation.

In his 1956 book, *The Century of the Surgeon,* Jürgen Thorwald, recounts, with some justifiable literary license, the story of Ludwig Rehn's dramatic suturing of Wilhelm Justus's stabbed right ventricle just 100 years ago. The tale is in the book's last chapter, "The Inner Sanctum," and Thorwald concludes with these words:

> Rehn had opened up for the surgeon a part of the human body which had hitherto been considered an inviolate sanctum. The door was open, and henceforth there would be no stopping the surgeon's scalpel.

"The heart," da Vinci wrote, "... moves of itself and does not stop unless forever." Leonardo, you were wrong!

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

This Month's Reading in Review

TIMOTHY B. NORBECK

"Some managed-care groups have set off an ominous medical trend by refusing to pay for overnight hospital stays for mastectomies. More proof that dollars and cents, lower expenses and higher profits matter most to many players in the managed-care game. That's why Congress has a responsibility to step in with more patient-protection regulations."

An editorial from the *St. Louis Post-Dispatch* (4 October 1996)

A study published in the 2 October issue of *JAMA* found that "Patients who were elderly and poor were more than twice as likely to decline in health in an HMO, as in a fee-for-service plan." The researchers said their findings, based on observation of 2,235 patients in Boston, Chicago, and Los Angeles, should send "a cautionary note to policy makers."

New York Times (2 October 1996)

"These findings are an indictment of the whole notion that we are going to be able to cut costs, and the cuts will have the same effect on everybody."

John E. Ware, Jr., M.D., of the New England Medical Center, Boston, and author of the 2 October *JAMA* study.

Sixty-nine percent of the nation's 1.5 million nursing home residents are supported by Medicaid.... Meanwhile, the over-85 population is the fastest-growing age group, prompting the Census Bureau to project a 22% increase in the number of elderly living in nursing homes by the year 2000.... That growth is expected to help keep the $165 billion-a-year Medicaid program rising at an annual rate of 10%.

Business Week (30 September 1996)

Donations to the nation's blood supply have been steadily declining over the past 12 years.... Fear of AIDS and increasingly stringent safety requirements are preventing people from donating—at least temporarily.... People with new tattoos or pierced body parts, or who have spent more than 72 hours in jail, must wait a year before donating blood.

AP/Deseret News (6 October 1996)

Just in case you were wondering what the next health insurer cost-savings scheme might be after the "drive-by deliveries" and the "drive-through mastectomies," wonder no more.... An Illinois HMO (Health Alliance) is telling doctors that its "goal length-of-stay" for heart bypass surgery is three days.... The three-day LOS "would represent a greater than 60% decrease in the average hospital stay for bypass patients.... The associate medical director of Health Alliance explained that the guidelines were from the health-care management firm of Milliman and Robertson and approved by a "panel of experts." ... However, when asked who the experts were, "he said he couldn't remember them and didn't have a list."

Springfield (IL) State Journal-Register (26 September 1996)

"What's inevitable is a massive rebellion. I don't know that we'll ever go back to fee-for-service medicine, but the commercialization of health care won't sweep the nation without a backlash such as you see in California, to restore the values of healing to the health-care system."

Harvey J. Rosenfield, a consumer advocate, commenting on Proposition 216 which comes before California voters on 5 November. Prop. 216 would place limits on premium increases, impose fees or taxes on health-care mergers and create a watchdog" board to oversee health plans.

New York Times (3 October 1996)

According to the Alzheimer's Association, the U.S. currently spends between $80 and $100 billion a year on costs related to Alzheimer's, "making it the third most expensive disease in the country." Ten percent of Americans 65 or older suffer from the disease, according to the association. It also reports that seven out of 10 Alzheimer's patients live at home, while the remaining patients are cared for in nursing homes or other institutions. Since the risk of developing Alzheimer's increases with age, most Alzheimer's patients "are in the senior age group targeted by Medicare HMOs."

Crain News Service/Business Insurance (7 October 1996)

Only in America: In July in Dadeville, Alabama, a Mr. Gabel Taylor, 38, who had just prevailed in an informal Bible-quoting contest, was shot to death by the loser.

Washington City Paper (9 August 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

From the Executive Director's Office

COUNCIL MEETING

3 October 1996

Attendance

Present, in addition to the Chairman, Dr. Joseph Czarsty, were Drs. Ahamed, Bigos, Bobruff, Deren, Freedman, Hollister, Kamens, Katz, McDonnell, Sadowski, Sosa, Tesoro, Watson, Wetstone, Wolfson, and Zeppieri.

Also present were: Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Schaffman, Ms. Norbeck, Mr. Sullivan, Mr. Staples (all CSMS staff), Ms. Harney (NHCMA staff), Ms. Comarco (HCMA staff), Dr. Genel and Dr. Thompson (CSMS/IPA).

Absent were: Drs. Beck, Brooks, C. Czarsty, Eslami, Fischbein, Franklin, Geary, Handelman, Herzog, Keating, Koplin, Lesnik, Montegut, Mushlin, Narayanan, Redmond, Scarpa, Schwartz, Timmerman, and Wesler.

Neil H. Brooks, M.D., Rockville

The Chairman of the Council announced that he had just received information that Dr. Neil Brooks had been elected President-Elect of the American Academy of Family Physicians. It was VOTED that an appropriate memento of congratulations be sent to Dr. Brooks from the Society.

Approval of Minutes

It was VOTED to approve the minutes of 14 August 1996.

Reports of Related Organizations

CSMS/IPA: Dr. David D. Thompson, Jr., President of the CSMS/IPA, pointed out that the CSMS/IPA's Board is trying to abide by all the legislative initiatives that CSMS is trying to achieve at the legislature. They believe in "Any Qualified Provider" with 6,500 providers statewide and are open to any qualified physician as a member. They do have strict credentialing criteria and one of the criteria is that they require that providers be members of CSMS. They are also trying to come up with mechanisms to control utilization, one of which is computerizing the valuation mechanism to determine physicians' costs on a case-adjusted basis. Reports will go out to participating providers who fall outside the norm. He reported that CSMS/IPA is absolutely opposed to gag clauses and individual capitation. They are reviewing all preauthorizations to determine how they are working and whether they are accomplishing results, with the intention of eliminating some of them. Letters will be going out in January informing physicians that henceforth they will no longer require preauthorization on some procedures on the grounds that they are no longer necessary to accomplish utilization control. They are going to try to direct all future utilization controls to those providers falling outside the norm. The report was received as information.

CPRO: Dr. Edward Kamens reported that CPRO is now a partner in the Rhode Island PRO, and the program is going along very smoothly. CPRO has received information on the preliminary results on the acute myocardial infarction study in terms of the kind of improvement going on as a result of the educational effort made by the PRO. In the process of care, Connecticut has the best record of the four pilot PROs in compliance and has shown the greatest improvement. The report was received as information.

Report of the President

Dr. Michael Deren reported that this would be the 75th function that he has attended as a representative of CSMS. These included breakfasts, lunches, dinners, legislative appearance, AMA meetings, radio and newspaper interviews, and meetings with various allied organizations on issues of mutual interest. He stated that from meeting with these various entities he learned that CSMS is very well respected. One meeting he attended was that of the Hartford Medical Society which houses a library and a museum. He stated that they are having some difficulty in maintaining their building and he hoped that perhaps, through volunteers, a method could be found to keep this historical building intact.

PSO: Dr. Deren announced the names of the committee appointed to monitor the feasibility study. They are: Dr. Deren, Chair, Drs. Bigos, J. Czarsty, Eslami, Kamens, Keating, Mushlin, Sadowski, and Watson. He reported that the committee met and chose a consultant by the name of James Darnell from California. Dr. Deren asked for the following action:

To expand the committee to include nonmembers of the Council. It was VOTED to approve this recommendation with one abstention.

To provide an additional $26,000 for the feasibility study of the PSO. It was VOTED that an additional $26,000 for a total of $156,000, which includes sales tax, be approved for the study of a Physician Service Organization, and not a health-care delivery system of any type.

It was the consensus of opinion that the $156,000 would be taken from the Countersuit Fund.

Dr. Deren reported that the consultant would be doing the following:

1. Due diligence process—gathering of the data.
2. Market assessment—looking at what is going on in the state.
3. Looking at business development—for-profit entity.
4. Execution strategy—short and long term—how to fund.
5. Implementation—secure management, how to start.

In response to a question about obtaining the study made by MEDSERV, Dr. Deren reported that he was informed that the study made by them was for an HMO and not a PSO. The feasibility study for an MSO was made by Hartford County Medical Association, and he has not yet received any information on that study.

PROCIS: The committee has met with representatives of PROCIS and heard a presentation which outlined what they had and what was going on. The committee made no offers, since the purpose of the meeting was to find out details and what the software was worth. Cam Staples, CSMS legal counsel, will be obtaining information about this issue from the referee.

Workers' Compensation: Dr. Deren reported meeting with Chairman Jesse Frankl and discussed the following issues:

1. *Protocols:* Mr. Frankl stated that our detailed evaluation of the protocols that were sent to him had been submitted to his Advisory Panel, which has yet to review them. He is going to try to facilitate this matter.
2. *Family Physician Role in Workers' Compensation:* Family physicians are currently excluded from the list of required specialists for Workers' Compensation managed-care plans. Mr. Frankl reported that he was working on a solution to the problem with the Connecticut Academy of Family Physicians.
3. *Unresolved Prior Claims:* Mr. Frankl informed CSMS to advise the physicians that they may contact his office directly regarding any previously submitted outstanding unresolved prior claims to enlist his direct intervention in equitably resolving the cases.

Distinguished Citizen Award: The committee met to establish criteria for this award and proposed the following:

1. That the individual contributed to the quality of life.
2. That the individual make a significant humanitarian contribution.
3. That the individual be a Connecticut citizen.
4. Nominations may be made by any CSMS physician.
5. The Public Affairs Committee would screen nominations and make a recommendation to the Council.
6. Nominees must be presented to the Council two meetings before the annual meeting.
7. Council would vote by majority as to whether the award should be made.
8. Awards do not have to be made every year.

It was VOTED to approve the above criteria as presented.

Physician Health Committee: Dr. Deren reported that he had received a letter from Dr. William B. Lyons, Chair of the Physician Health Committee, tendering his resignation from the committee due to personal commitments. It was VOTED to accept Dr. Lyons' resignation and to send him a letter expressing the Council's appreciation for his years of service on the committee. Dr. Deren recommended that Dr. Alfred Herzog be appointed as Chair of the committee. It was VOTED to approve Dr. Deren's recommendation.

Report of the Executive Director

Mr. Norbeck reported on the following items of interest:

The Medicare debate was really heating up in Florida, where senior citizens account for about 40% of the electorate—compared to about 23% nationwide. The latest statewide poll shows President Clinton ahead by eight points.

As previously reported CIGNA recently appealed the Connecticut Supreme Court decision which had overruled Superior Court Judge John Blue, who had claimed that ERISA prevented enactment of managed-care reform in Connecticut. The case was Hollis & Napoletano *vs* CIGNA, a case in which CSMS and AMA supported the plaintiff with *amicus* briefs. The Connecticut Supreme Court denied CIGNA's appeal and the case goes back to Superior Court, where it will be retried on the merits and facts of the deselection case.

A New Jersey poll showed that about one-half of New Jersey residents have heard or read little or nothing at all about managed care, despite its continuing growth in the state. Eight out of ten residents said that their ability to choose a doctor is more important than reducing their health-care costs.

Shortly, AMA members will receive ballots asking them to select one national specialty society to represent them in the House of Delegates. The return deadline will be no later than 20 December and the specialty

society will be notified of their appointment no later than 31 January 1997. The House of Delegates is over 400 now and will grow to 600. For the first three years, specialty societies will have one delegate and one alternate for each 2,000 members. In the fourth year, the number will be one delegate and one alternate for each 1,000 members.

It was noted that having already been alerted to "drive-by deliveries" and "drive-through mastectomies," now in Illinois, an HMO is telling doctors that its goal for length of stay for heart bypass surgery is three days. The HMO medical director stated that the three-day guidelines were from the health-care management firm of Milliman and Robertson and approved by a panel of experts. When asked who the experts were, he said he couldn't remember them and didn't have a list.

Connecticut Medical Insurance Company

In accordance with Council action, prior to each House of Delegates meeting, a report is presented from CMIC. A written report was received from Dr. Sultan Ahamed, President and Chairman of the Board of CMIC. It was reported that there would be no premium increase for 1997 and that a 1996 policy holder dividend of $2.25 million will be applied as a premium credit to eligible CMIC members renewing their policies in 1997. This is CMIC's sixth consecutive and largest policy holder dividend. Membership is approaching 3,100 and 241 new members joined CMIC between August 1995 and August 1996. The report included information on the Risk Management Education seminars, their role as an essential partner in members' practices, and outlined some upcoming projects. Dr. Ahamed answered questions that were raised and the report was received as information.

Nominations for Positions on AMA Councils

It was VOTED to submit the name of Joseph A. Sadowski, M.D. for membership on the AMA Council on Legislation.

Nomination to Council on Scientific Affairs

It was VOTED to endorse Myron Genel, M.D., for reelection on the AMA Council on Scientific Affairs.

Ad Hoc Committee on Data Release

At the request of the Council, the Ad Hoc Committee on Data Study submitted recommendations concerning this issue. It was VOTED to accept the following five recommendations:

1. That CSMS utilize its newly acquired hardware and software capacity in the most efficient and effective manner possible.
2. That CSMS obtain and accession as much physician demographic information as it can in order to facilitate its future use in any CVO activities.
3. That CSMS obtain demographic information from public sources that it deems helpful in addressing its position on public health issues.
4. That CSMS not seek to become a repository or health data center for all health-care data in Connecticut, but support the gathering of as much health-care data as possible by its own peer review organization (CPRO) so that it may be available to CSMS.
5. That CSMS promulgate the AMA's policies regarding the handling of physician and patient data including oversight and confidentiality with regard to data collected by itself or others.

There were four other recommendations in the report suggested by Dr. Stephen Katz and it was VOTED to accept these recommendations as information.

It was further VOTED that a permanent committee be appointed to supervise this activity.

Report of the Fiscal Subcommittee

The Council took the following action on the Report of the Fiscal Subcommittee:

VOTED to approve the budget for 1997, as presented by the Fiscal Subcommittee and transmit the budget to the House of Delegates on 13 November with the Council's recommendation that the budget be approved and that the CSMS dues be set at $390.

VOTED to approve a capital budget for 1997 in the amount of $20,794.59.

VOTED to approve a Physicians' Health & Education Fund budget for 1997 in the amount of $23,500.

Date of Future Meeting

Council—Wednesday, 16 January 1997.

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2. Include in items 10 and 11, in cases where the stockholder or security holder is a trustee, the name of the person or corporation for whom the trustee is acting. Also include the names and addresses of individuals who are stockholders who own or hold 1 percent or more of the total amount of bonds, mortgages, or other securities of the publishing corporation. In item 11, if none, check box. Use blank sheets if more space is required.
3. Be sure to furnish all information called for in item 15, regarding circulation. Free circulation must be shown in items 15d, e, and f.
4. If the publication had second-class authorization as a general or requester publication, this Statement of Ownership, Management, and Circulation must be published; it must be printed in any issue in October or the first printed issue after October, if the publication is not published during October.
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Failure to file or publish a statement of ownership may lead to suspension of second-class authorization.

PS Form **3526,** October 1994 *(Reverse)*

COMMITTEE SERVICE QUESTIONNAIRE

Connecticut State Medical Society

Early in 1997 the Councilors from the eight constituent county medical associations will assume the responsibility of selecting members of the Society to participate in the various activities of the Society, listed below. In making these selections it is of importance to choose physicians who are not only willing and able to serve but also who are known to have an interest in the work of the group to which they may be assigned. In order to enable this office to furnish the Councilors with a compilation of those who desire to be considered for committee service, members are asked to indicate by number in order of preference (not more than three) opposite your choice in the questionnaire below and return same to the:

Executive Director's Office
160 St. Ronan Street
New Haven, CT 06511

Your cooperation will be appreciated.

Medical Education

★ Committee on Continuing Medical Education

Medical Economics

★ Committee on Insurance
★ Committee on Workers' Compensation

Professional Relations

★ Committee on Ethical and Judicial Affairs

Public Affairs and Communication

★ Editorial Committee on *Connecticut Medicine*
★ Committee on Legislation
★ Committee on Public Affairs

Scientific and Socio-environmental Medicine

★ Cancer Coordinating Committee
★ Committee on Physician Health
★ Committee on Maternal Morbidity and Mortality
★ Committee on Medical Aspects of Sports
★ Committee on Organ and Tissue Transfers
★ Committee to Study Perinatal Morbidity and Mortality
★ Committee on Public Health
★ Committee on Statewide Medical Planning
★ Committee on Geriatrics
★ Committee on Alcohol and Other Drug Dependency

Representative and Advisors

★ Committee on Allied Health Services
★ Committee on Medicare
★ Delegates to Connecticut Public Health Association, Inc.
★ Delegates to Connecticut Nutrition Council
★ Representatives to Connecticut Advisory Council on School Health

Please return by January 15, 1997

Name: _____ M.D.
(Please Print)

Office Address: _____

_____

IN MEMORIAM

BRAISTED JR., WILLIAM E., McGill University Faculty of Medicine, Montreal, 1936. Dr. Braisted was a medical missionary in China and India and later worked in a number of medical practices in Connecticut including Connecticut Hospice and Branford Hills Health Center. Dr. Braisted was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Braisted died 28 August 1996 at the age of 90.

BUTTERFIELD, WALTER L., Harvard Medical School, 1941. Dr. Butterfield maintained a practice in orthopaedics in Hartford for many years and was on the active staff of the Hartford Hospital. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Butterfield died 18 September 1996 at the age of 80.

LEVINSKY, MAURICE, University of Maryland School of Medicine, 1928. Dr. Levinsky retired in 1989 from Park City Hospital after 59 years of service. He was a member of the surgical department until 1968 when he was granted an emeritus staff appointment and served as a member of the Department of General Practice until 1989. Dr. Levinsky was on the teaching staff at Yale University. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Levinsky died 16 October 1996 at the age of 97.

MEUNIER, JOHN L., University of Vermont College of Medicine, 1938. Dr. Meunier, a Litchfield county physician retired from the practice of urology in 1983. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Meunier died 25 August 1996 at the age of 88.

MORRISSETT, LESLIE E., Medical College of Virginia Health Sciences Division of Virginia Commonwealth University, 1930. Dr. Morrissett retired from the practice of otolaryngology in 1971. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Morrissett died in Virginia at the age of 92.

PERSONS, RAY E., State University of New York College of Medicine, Syracuse, 1943. Dr. Persons, a Meriden internist, served on the senior medical staffs of The Curtis Home and the Meriden-Wallingford Hospital. He also served on the board of directors of the Meriden Public Health Visiting Nurses Association, and was a former medical director of The Bradley Home. Dr. Persons was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Persons died 11 July 1996 at the age of 76.

ROSENBERG, MURRAY Z., Yale University School of Medicine, 1949. Dr. Rosenberg, a pathologist, was on the staff of Windham Community Hospital, serving as Chief of Pathology and Director of the Clinical Laboratory for 30 years. He had clinical appointments at Yale School of Medicine and the University of Connecticut School of Medicine. Dr. Rosenberg was a member of the Windham County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Rosenberg died 1 September 1996 at the age of 71.

TRAUTMAN, EDWIN F., Temple University School of Medicine, 1940. Dr. Trautman was a family practitioner for 55 years, serving as an industrial physician, the Director of Health for the town of Trumbull, and as the School Medical Advisor for the Trumbull Board of Education from 1948 to 1986. He was a founding member of the American Academy of Family Practice in 1948, later serving as Senior Attending Physician on the Bridgeport Hospital Family Practice Section. Active on numerous committees at the Greater Bridgeport Medical Association, Dr. Trautman was a member of the Fairfield County Medical Association, where he served as a delegate to the Connecticut State Medical Society from 1983 to 1987, the Connecticut State Medical Society where he served on numerous committees from 1960 to 1974, and the American Medical Association. Dr. Trautman died 16 September 1996 at the age of 83.

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

AMBULATORY CARE

Currently seeking full-time/part-time (IM/FP) BC/BE physician with focus on women's issues to join a multi-service medical facility providing outpatient preventive medicine and primary care exclusively to women. The medical practice consists of two full-time primary care physicians, an adolescent medicine specialist, a physician's assistant, a nurse practitioner in adult medicine and gynecology, a nutritionist with individual weight loss and cholesterol reduction programs, three psychotherapists, ACR accredited mammography, ultrasound, massage therapy, and adjoining laboratory. Women's Care is proud of its comprehensive approach to medical care and health care maintenance and welcomes you to join our team of health care professionals committed to women's issues and education. For more information, contact: Caryn Nesbitt, M.D., Medical Director, 85 Poheganut Dr., Groton, CT 06340, (203) 448-6303.

FAMILY PRACTICE

Seeking a BC/BE family practice physician to join an active family practice in Stamford, Connecticut. This service area allows for tremendous growth potential. The 4,000 square foot office is located near the hospitals. Competitive compensation package includes full benefits and the opportunity for partnership. Additional benefits include call coverage, and a network alliance with Connecticut Health Enterprise. Enjoy living on the shores of Long Island Sound, in this waterfront community with beautiful beaches, rolling hills, and charming New England neighborhoods. Childcare magazine has listed Stamford as one of the five best places to raise children in the United States. Top ranked school systems and low crime. Only 40 miles to New York City. Contact: Tammy Pavlock or Barbara Volk at 1-800-521-6780 or send CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

Physician wanted, BE/BC in family practice, for five physician family practice in Stamford, Connecticut. Lovely area for schools. Close proximity to New York City. Send CV to: Stamford Family Practice, P.C., 2009 Summer St., Stamford, CT 06905 or call Barbara Lane, Administrator at (203) 977-2566.

INTERNAL MEDICINE

General internist with or without subspecialty certification needed to join busy, four physician practice in New Haven suburb with on-site laboratory and x-ray facilities. Excellent compensation and benefits leading to early partnership. Send CV to CSMS, c/o IM/DH.

PART-TIME

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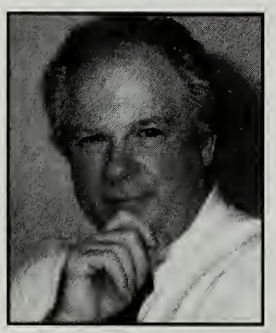

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The Role of Laparoscopic Ovarian Biopsy in the Managment of Premature Gonadal Failure

AUGUST C. OLIVAR, M.D.

ABSTRACT—Approximately 1% of women enter menopause before 40 years of age.[1] This premature event, however, is not as consequential when women have completed their reproductive lives as when they desire another pregnancy. When this latter situation does arise, the question facing the clinician is whether the ovaries still have follicles (resistant ovary syndrome) or they are depleted of these primordial follicles (premature menopause).

The only way to demonstrate the presence of or absence of primordial follicles in the ovaries is by obtaining an adequate biopsy specimen for histopathologic diagnosis, a procedure that can be done via laparoscopy.

This study had two purposes: one was to determine whether laparoscopic ovarian biopsy can provide an adequate specimen for hystopathologic diagnosis safely and with low complication rates, and the other, to ascertain the relative frequency of premature menopause and resistant ovary syndrome.

Patients and Methods

THIS study included 22 patients with premature ovarian failure and infertility who consulted our subspecialty division from January 1988 to December 1994. They all agreed to an ovarian biopsy by laparoscopy. Their ages ranged from 21 to 38 years, with an average of 31.7 years of age.

Their serum gonadotropins were elevated in the menopausal range on at least two occasions. The duration of infertility ranged from one to four years (mean 1.9 years) and they all had normal karyotypes.

Laparoscopy was performed under general anesthesia utilizing two punctures with a 5 mm trochar in the right and left lower quadrant. The ovary was stabilized with grasping forceps, usually by holding the utero-ovarian ligament and exposing the ovary to the biopsy forceps (Richard Wolf Medical Instruments Corporation, Vernon Hill, Ill.). These biopsy forceps extend their grasping tongues and when the amount of ovarian tissue desired is secured, the handle is turned to screw down the cutting edge which covers the protruding ends of the forceps, cutting the tissue grasped. Generally a good-sized specimen, including the cortex and stroma of the ovary, is obtained. Bleeding was usually mild or moderate and was always adequately controlled with the bipolar electrocoagulation forceps.

Results

Five of 22 patients (22.7%) showed the presence of primordial follicles in their ovarian biopsies. Of these five patients two subsequently became pregnant, one patient conceived on her second month of suppression with 1.25 mg of conjugated estrogens, and 5 mg of medrox progesterone acetate and the other conceived with menotropin ovulation induction. Of the other three remaining resistant ovary syndrome two of them continued on suppression therapy for 12 months and decided not to proceed with menotropin induction. The third patient did not conceive and therefore they should all be considered failures (see Table 1).

There were no intra- or postoperative complications in this series. In our hospital the total cost for a laparoscopic bilateral ovarian biopsy is $5,114, while an induction of ovulation for a low responder or a patient with resistant ovary syndrome after estrogen and progestin suppression

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Presented at the World Congress of Gynecologic Endoscopy and AAGL 24th Meeting 10-12 November 1995, Orlando, Florida.

Table 1.—Prevalence of Patients Having Primordial Follicles by Laparoscopic Ovarian Biopsy and Results of Treatment				
	No. of Patients	**%**	**No. Pregnant**	**%**
Primordial follicles present	5	22.7	2	40
Primordial follicles absent	17	71.3	—	—
Total	22	100	2	9

is a approximately $4,951 using about 60 ampules per cycle (Table 2).

Discussion

Many patients with premature ovarian failure are desirous of pregnancy; however, pregnancy will only occur if there is a sufficient number of primordial follicles in the ovaries.

There is a group of patients with amenorrhea in whom there is evidence of ovarian resistance to gonadotropins. These patients usually have small ovaries with unstimulated follicles and increased gonadotropins, a condition that has been termed the resistant ovary syndrome. Thus, in contrast with the true premature menopause in which there are no longer sufficient follicles in the ovaries, the resistant ovary syndrome has a pool of follicles that might be able to respond to the use of ovulation agents. In the past, to arrive at a correct diagnosis, laparotomy was necessary to achieve an adequate biopsy for histological evaluation of the ovaries, since laparoscopic biopsy was not adequate according to Sutton and Rebar.[2,3]

In the last decade the development of better laparoscopic instrumentation as well as the experience to manage laparoscopic complications have made it possible to obtain adequate ovarian biopsy specimens, which can be histologically representative of the clinical condition, allowing the clinician to decide on the management accordingly.

As to the instrumentation, the Wolf biopsy forceps have always worked in our hands, but any other instrument capable of providing adequate tissue for diagnosis may be utilized.

Table 2 summarizes the cost of laparoscopic ovarian biopsy, a representative cycle of ovulation induction in patients without elevated gonadotropins and a cycle for resistant ovary syndrome. One can see that induction of ovulation in these hypergonadotropic patients can be as expensive as a laparoscopic ovarian biopsy, contrary to statements made in the past by some investigators.[4]

In order to answer the patient's question as to whether it would be possible to induce ovulation with the possibility of pregnancy, the ovarian biopsy will in most cases suffice to answer this question. Most importantly, in the absence of follicles, the patient may be told that she has premature menopause, and that she should seek other avenues to achieve pregnancy.

Unless there is a contraindiction for laparoscopic biopsy, there seems to be no place for empiric teatment (induction of ovulation with menotropics without a issue diagnosis) in patients with premature gonadal failure.

In this study the prevalence of patients having ovarian follicles in the presence of elevated gonadotropins was 22.7%, certainly not an insignificant number. The series is small and may not represent the prevalence in the general population.

Conclusion

In conclusion, at the present time in my opinion, there is no place for empirical treatment (induction of ovulation with menotropins without tissue diagnosis) unless there is a specific contraindication for laparoscopic surgery.

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3. Rebar RW, Erickson GF, Yen SSC: Idiopathic premature ovarian failure: clinical and endocrine characteristics. *Fert Steril* 1982; 37:35-9.
4. Speroff L, Glass RH, Kase NG: *Clinical Gynecologic Endocrinology and Infertility.* Williams and Wilkins, Baltimore third edition, 1983:152.

Table 2.—Cost Analysis of Laparoscopic Ovarian Biopsy *vs* Drug Therapy (Menotropins)				
	Hospital fee —Ultrasound ($250.00)	Anesthesia fee —HMG* ($65.29)	Surgeon fee CPT**: 58900 Estradiol—17B ($85.00)	Totals
Laparoscopic ovarian biopsy	$2,072	$1,292	$1,750	$5,114
Induction of ovulation (average cycle)	$750(x3)	$1,305	$255(x3)	$2,310
Induction of ovulation (ov. resistant cycle)	$1,000(x4)	$ 3,917(60)	$340(x4)	$4,951

*Huyman Menopausal Gondotropins **Current Procedural Terminology—standardized reimbursement by HMOs and insurance companies.

Cancer Screening in Primary Care: Strategies for Your Office

A Program of the Connecticut Division of the American Cancer Society

BERNARD GREENBERG, M.D., SUSAN RICHTER, R.N.C., MICHAEL FELTES, M.D., EARL GROSS, M.D., DEBORAH HOLTON-SMITH, R.N., BAILEY PRYOR, AND DAVID ROSS-RUSSELL, M.D.

ABSTRACT—Primary-care physicians' compliance with cancer screening guidelines has been in general unsatisfactory. Mailings have not had the desired effect upon these busy physicians who are preoccupied with many other issues. The Ohio Division of the American Cancer Society developed a program of in-office cancer screening education of primary-care physicians which resulted in a significant improvement in compliance to cancer screening guidelines. The Connecticut Division of the American Cancer Society has pursued this concept with their own program of visits targeted at physicians and their office staffs. A description of this program, which is still in its initial phases, is presented. The impact will be evaluated in due time, however additional volunteers to conduct these visits are needed.

Introduction

IMPROVING primary-care physician compliance with recommended cancer screening guidelines is one of the core priorities of the American Cancer Society (ACS). Providing guidelines, literature, and patient information material through the mail frequently does not have the desired effect upon busy physicians who are preoccupied with many other issues. A program of in-office cancer screening education of primary-care physicians was initially instituted by the Ohio Division of the ACS.[1] The effects of this program have appeared promising. A post-intervention assessment revealed a 35% increase in compliance, from 35% to 70%.[1] This concept seemed to be quite suitable for the State of Connecticut which is relatively small, and a similar program would have the potential for reaching primary-care physicians in every part of the state. Subsequently, the Connecticut Division of the ACS developed their own program of in-office visits to primary-care practices.

An ad hoc committee from the Division's Medical Affairs Committee was formed with representation from the Division's Nursing Committee. There was a strong consensus of opinion that these visits would have the greatest effect if they were directed at both the primary-care physicians and their office staffs. Appropriate material would also be provided for patients.

Primary-Care Physicians

The behavior of primary-care physicians may have a major effect on compliance with cancer screening guidelines. For example, approximately eight in 10 women report having had a mammogram because it was recommended by their physicians. Data from numerous sources, including patient and physician surveys and medical record audits, reveal that patients have not accepted and/or complied with cancer screening recommendations. Additional reports have found low cancer screening performance rates among physicians.[2]

The reasons for physicians' poor compliance with cancer screening are multiple and include: 1) overestimation of the physician's own cancer screening test performance

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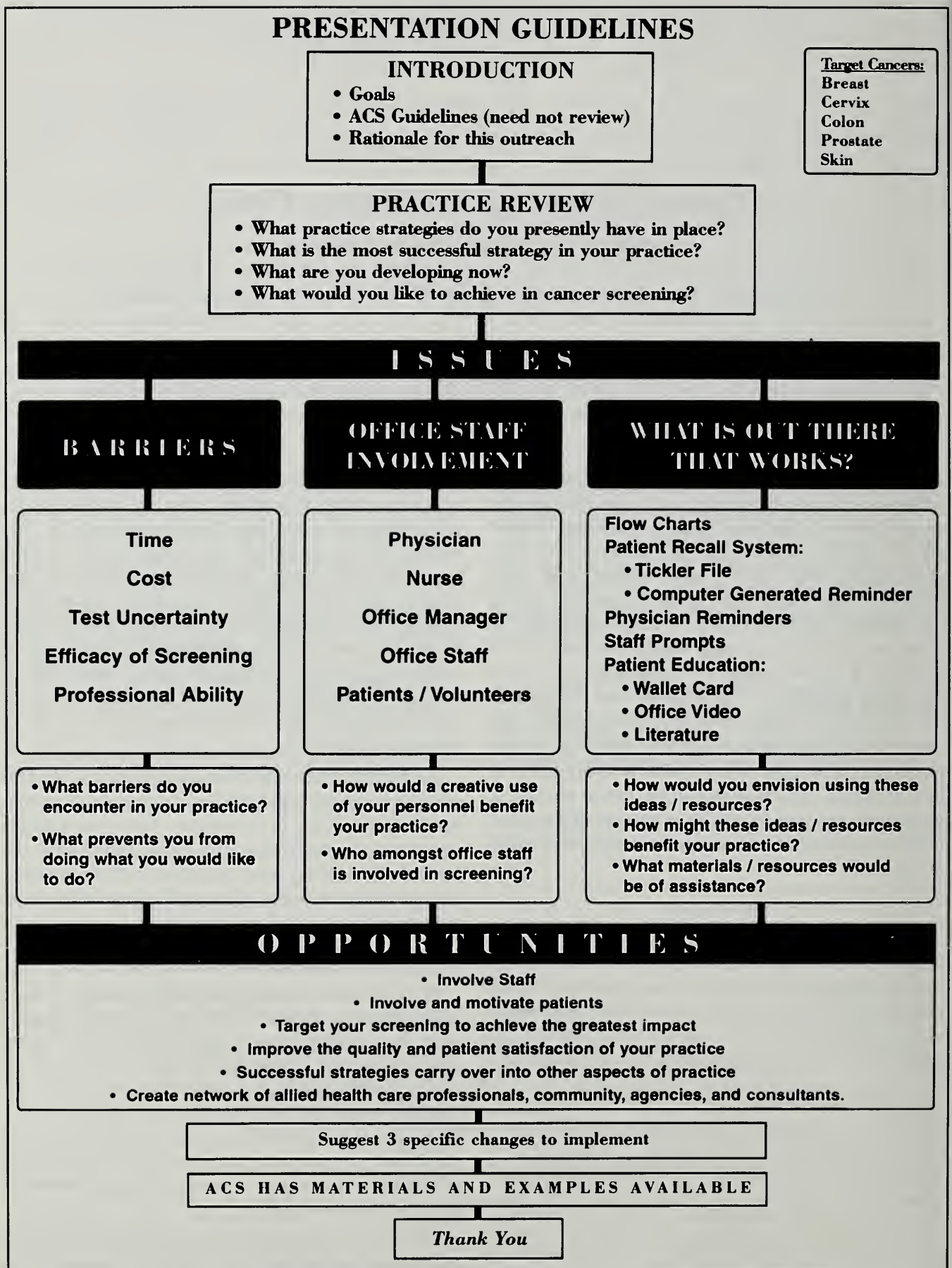

Figure 1.—Presentation guidelines for the volunteers conducting the office visits.

rate; 2) disagreement with cancer screening guidelines, which hampers consistency; 3) forgetfulness, which appears to be a major reason in busy practices. In this area the office staff could assist significantly; and 4) refusal by patients. The last may occasionally be a problem, particularly with costly and more uncomfortable screening procedures.

It was our aim to show primary-care physicians that incorporating routine cancer screening into their medical practices encourages better health practices, greater compliance with follow-up recommendations, and better health-care planning. We emphasized that patients are also more satisfied with their physicians when preventive measures are discussed and effectively followed.

Goals

The goals of this program were clearly outlined by the ad hoc committee and subsequently presented to the primary-care physicians. Our principal goal was to assist primary-care physicians in achieving their potential in the early detection of cancer. We would work with physicians and their office staffs to improve compliance with screening guidelines by: 1) education (awareness), 2) enlisting office staff support, and 3) providing access to computer software, checklists, and eventually reminder systems. We would also help them improve patient access to counselling and education regarding the importance, nature, and recommended frequency of cancer screening activities.

The ad hoc committee conducted several pilot visits to representative primary-care office practices. In general, these visits were made during the noon hour, and lunch was provided to the physicians and their office staffs. Each visit was made by a physician and nurse. It was emphasized that attendance by both physicians and the appropriate office staff was necessary if these visits were to prove effective.

Packets were prepared that included presentation guidelines for the volunteers making the visits (Fig. 1).

In the introduction, the visitors discussed the goals of the program, ACS guidelines (which were not comprehensively reviewed), and the rationale for this outreach program. The physicians were asked to consider four questions:

1. What practice strategies did they presently have in place for cancer screening?
2. What was the most successful strategy in their practice?
3. What were they developing now?
4. What would they like to achieve in cancer screening?

These following issues were then addressed:

Barriers leading to lack of compliance with cancer screening guidelines: This includes time, cost, uncertainty of the screening test, the efficacy of the cancer screening in general, and the ability of the physician to perform some of the screening procedures.

Involvement of office staff: The physicians and their staffs were asked how a creative use of personnel would benefit their practice. Also they were asked who among the office staff were presently involved in cancer screening.

Resources to aid in cancer screening compliance: Flow charts were discussed, and a sample one prepared by the Connecticut Division was distributed. Discussion of a patient recall system followed, including either a tickler file or computer-generated reminders. Additional reminders and staff prompts were considered.

The ad hoc committee prepared wallet cards for both men and women which listed recommended cancer screening procedures and provided space for the patients to note when they had these procedures performed (Fig. 2). These cards were made available to all physicians for distribution to their patients.

The committee prepared material for the presenters and the primary-care physicians providing cancer screening guidelines, opportunities, and practice recommendations for five cancers: breast, cervix, colon, prostate, and skin (Fig. 3). This material was briefly reviewed with the physicians and their office staffs. In addition, brochures were prepared for patients with information on the five targeted cancers, both as a hard copy and on a disk, which made it possible for each practice to include its own individual logo on the brochure.

The physicians and their office staffs were asked how they envisioned using the ideas and resources presented to them to benefit their practice with the goal of improving compliance with cancer screening guidelines. They were also asked if additional materials or resources would be of assistance to them.

The Connecticut Division subsequently received funds from the Connecticut Department of Public Health to produce a videotape to assist in the training of new volunteers for the primary-care office visit program. This tape was introduced at a workshop attended by physicians and nurse volunteers from all 12 units in the state.

To complete the multifaceted approach to cancer screening another videotape was produced especially for patients in physicians' waiting rooms. This videotape reviewed the value of early cancer detection and included testimonies from six cancer survivors, one of whom is a well-known personality in the entertainment industry. The tape contained compelling stories of how early cancer

American Cancer Society recommendations for those at normal risk, as of 10/1/93

Colon cancer prevention: Stool cards for blood every year from age 50. Flexible sigmoidoscopy at age 50, repeat every 3-5 years.

Breast cancer prevention: Women should perform breast self examination every month. Physician exam annually. Mammogram every two years from age 40, annually from age 50. No upper age limit.

Cervical cancer prevention: Women should have PAP test performed annually from age 18, or once sexually active, whichever is earlier. No upper age limit.

Skin cancer prevention: Avoid direct sun exposure whenever possible. Wear protective clothes and hats; use SPF 15 or above suncream. Annual physical exam by your physician should include detailed exam of all skin for early changes associated with cancer.

Cancer Screening Log
WOMEN

Patient:_____

SKIN- examination DATE	RESULT	BREAST DATE	TEST	RESULT
CERVIX- PAP test DATE	**RESULT**	**COLON DATE**	**TEST**	**RESULT**

Figure 2.—Wallet cards prepared for women; a (top) and b (bottom).
Recommended cancer screening procedures are listed and space provided for patients to keep track of them.

American Cancer Society
recommendations for those at normal
risk, as of 10/1/93

Colon cancer prevention: Stool cards for blood every year from age 50. Flexible sigmoidoscopy at age 50, repeat every 3-5 years.

Prostate cancer prevention: Digital rectal examination with each physical from age 50. PSA (Prostate specific antigen blood test) from age 50 at physician's discretion.

Skin cancer prevention: Avoid direct sun exposure whenever possible. Wear protective clothes and hats; use SPF 15 or above suncream. Annual physical exam by your physician should include detailed exam of all skin for early changes associated with cancer.

Cancer Screening Log
MEN

Patient:_____

Figure 2.—Wallet cards prepared for men; c (top) and d (bottom).
Recommended cancer screening procedures are listed and space provided for patients to keep track of them.

SKIN- examination DATE	RESULT	PROSTATE DATE	TEST	RESULT
		COLON DATE	TEST	RESULT

Breast Cancer Screening

SCREENING GUIDELINES

1. Self breast exam (SBE): monthly at age 20
2. Clinical breast exam (CBE); every 3 years age 20-40, annually at age 40
3. Mammography: every two years at ages 40-50, annually at age 50

ISSUES

Probability of a woman having breast cancer following ACS mammography guidelines: Age 60-69: 33% Age >70: 27%

Age recommendations:

- Evidence in support of screening mammography at age 40-49 is not conclusive.
- There is little information available on mammography screening efficiency after age 75; age 75 should have regular screenings.

Cost barriers:

- Changing reimbursement (i.e.: MC/MA) has diminished financial barriers.
- Access to quality mammography centers is a problem in some ares.

Practice barriers:

- Physicians raise concerns about the reliability of mammographers and the accuracy of their reports, the lack of time during episodic visits for a breast exam, their own forgetfulness, and the low yield of screening.

OPPORTUNITIES

Procedures to enhance physician compliance with recommendations:

1. Medical record checklist, flowsheet
2. Medical record audit with feedback regarding results
3. computerized reminder generated at patient visit

Procedures to enhance patient compliance with recommendations:

1. Computerized or hand-generated reminders: direct mail or call to patient.
2. Patient education: Waiting room video, visuals, health maintenance displays, or literature.
3. Alliance with area public service and/or marketing resources: print, radio, community service organizations.
4. Patient health checklist to assist in identifying interest and/or need for screening.
5. Consistant and cooperative relationship with a single/few mammography centers.
6. Nurse or allied health professional examiners (CBE).

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continued on next page

Figure 3a (this page) and 3b (next page).—Material in packet for breast cancer, one of the five targeted cancers. ACS screening guidelines, current issues, opportunities, and practice recommendations are covered.

PRACTICE RECOMMENDATIONS

Target Women at High Risk

- Age >50,
- Personal or family history of breast cancer,
- Benign breast disease,
- Late (>30) first birth,
- Early (< age 12) menarche,
- Late (>50 menopause).

(3/4 of all women with breast cancer had no rick factors other than age)

- Teach SBE and reinforce at follow-up visits (very effective).
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- Inform your patients regarding availability of reimbursement.
- Train and utilize your nurses for CBE.
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detection saved these patients' lives. Efforts were made to allay the fears of patients who dreaded having a diagnosis of cancer made, no matter how early in its course.

The Connecticut Division of the ACS has given this program a high priority. Presently, teams of physician and nurse volunteers from the 12 units are conducting these visits, as well as follow-up telephone calls. Though the reception of these visits remains excellent, there are still too few volunteers to conduct them statewide. Efforts will be made to increase substantially the number of volunteers and to publicize these visits to physician organizations. Seminars targeted at office staffs are also being developed. The compelling effect of these visits on primary-care physicians' compliance with cancer screening guidelines will be evaluated in the future after a sufficient number of visits have been made and there has been adequate time for analysis.

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Abstracts: Fourth Annual Pediatric Resident and Fellow Research Day

Tuesday, 6 June 1995

Hartford Medical Society Building

Edwin L. Zalneraitis, M.D.,
Director, Pediatric Residency Program and Assistant Dean for Education,
Department of Pediatrics, University of Connecticut School of Medicine

ABSTRACT: On the occasion of our Fourth Annual Pediatric Resident and Fellow Research Day, 6 June 1995, the Department of Pediatrics again had the opportunity to present the results of research efforts by our residents and fellows in pediatrics. Considering the burdens of their service assignments, teaching, and other scholarly activities, it is remarkable that the trainees are able to carry on these efforts concomitantly. The results of their work is a tribute to them and their faculty sponsors who provide the necessary support in time and resources.

The areas addressed by this year's presentations again spanned a broad spectrum of topics of scientific, medical, and educational importance: Dr. Vineet Bhandari under the guidance of Dr. Mitchell Kresch, and Dr. Theodora Stavron working with Dr. Steven Bergstrom, examined cellular responses *in vitro* using biochemical approaches. Dr. Madeleine Mbuyamba also working with Dr. Kresch and Dr. Franz Babl under the guidance of Dr. Holger Hansen addressed clinical problems in the neonatal intensive care unit and on the streets of Connecticut, by a retrospective evaluation of clinical events. Dr. Carl Orkin and collaborators working under Dr. Lee Pachter presented work addressing the interface between community and medicine. Finally, Drs. Ziogas, Orkin, and Babl worked with me to present an analysis of the educational activity called "morning report."

The Department of Pediatrics is proud to recognize these outstanding contributions as representative of our overall efforts to bring new knowledge from the laboratory, the bedside, the community, and the classroom. They represent a commitment to improving the health and well-being of children in Connecticut and beyond through diligence and dedication of our administration, faculty, and matriculants.

Pediatric Morning Report: A Regional Perspective

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Introduction.—Morning report can be part of the educational experience for residents and chief residents in pediatric residency training programs. It represents a significant commitment of time and resources for both residents and faculty. This regional study attempted to characterize content, process, and educational quality of morning report as perceived by chief residents.

Methods and Materials.—Fifteen pediatric residency programs were surveyed including all New England programs and one New York program. All respective chief residents completed the mailed surveys.

Results.—Resident education was the highest rated objective of morning report. Less important was exchange of patient information and resident evaluation. Thirteen of 15 programs have morning report at least four times a week at an average of 3.5 hours per week. Attendance averaged 3.6 faculty members, 5.6 residents, and 2.4 medical students. Few programs were attended by community physicians. In eight programs the chief residents were the moderators; other moderators included department chairs, program directors, or the admitting resident. Most programs selectively discussed inpatients; most include pediatric intensive care unit admissions. Thirteen programs also discussed patient follow-up, but less than a quarter discussed issues like managed care, emergency department consults, telephone triage, outpatients, or deaths and resuscitations. The atmosphere of morning report was rated as educational and supportive greater than 70% time. It was often challenging, and less than 20% of morning reports were perceived as contentious and punitive. In terms of relative educational value, morning report was ranked behind clinical experiences and bedside teaching but ahead of didactic sessions, attending rounds, and grand rounds.

Conclusion.—Significant time and effort were allocated to pediatric morning report. In general it was perceived as a valuable educational experience. The focus of morning report was inpatient oriented but selective programs broadened content to include issues such as managed care and resuscitations, and participation to include community physicians. With changing Residency Review Committee guidelines and greater scrutiny of nonpatient care activities, morning report should not be overlooked as an important and effective educational tool.

Fever Beliefs Among Puerto Rican Parents

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Introduction.—Fever is one of the most common reasons parents of infants and young children seek medical care. Culturally specific beliefs and treatment of illnesses, like folk medical practices and the use of traditional healers, have been identified among the Puerto Rican community, yet literature concerning fever beliefs in this population is sparse. This study investigated fever beliefs and practices among the Puerto Rican community.

Methods and Materials.—In a voluntary convenience sample of 24 Puerto Rican parents at three University of Connecticut pediatric health-care sites during well-child visits a semistructured ethnographic survey was administered.

Results.—All parents interviewed were females aged 24 to 32 years. Two-thirds of the mothers were born in Puerto Rico and one-third in mainland United States. Fifty

percent of the parents believed that fever was caused by infection. Two parents felt that fever could be caused by *mal do ojo*, the evil eye, a folk illness. Eighty-three percent of the parents responded that fever is a symptom of an illness. All parents feared that a fever could lead to a seizure or brain damage. All parents used a combination of feeling the child, monitoring the child's behavior, and looking at the child's appearance to assess fever. Two-thirds used a thermometer to determine if their child had fever. All mothers said they would try to treat the fever themselves first before seeking medical care. The time elapsed between onset of fever and the decision to seek medical care after failed home remedies varied widely from one hour to three days. All mothers used Tylenol to treat fever. A third also used sponge baths. Two mothers indicated the use of *alcolado*, used as rubbing alcohol. Two-thirds prayed for their children with fever and one half felt that prayer could cure the fever.

Conclusions.—The Puerto Rican mothers complied with the traditional medical model of treating fever supported by the use of a thermometer to assess fever, the use of antipyretics to treat fever, and the belief that fever is a symptom of an illness or caused by an infection. Although some parents incorporated a dual belief system, nontraditional beliefs about the treatment of fever were not widely practiced. An overconcern about the severity and consequences of fever, as documented in the general population, were found among the mothers we interviewed. The use of nontraditional methods for treating fever and beliefs about fever not consistent with the traditional medical model might have been under represented in this study due to the medical setting where the interviewing occurred and to cultural differences between the interviewers and respondents.

Firearm Deaths of Children and Adolescents in Connecticut 1990-1994 (Preliminary Data)

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Introduction.—Deaths involving firearms were projected to be the leading cause of injury mortality in Connecticut children and adolescents in 1993. The objective of this ongoing study is to clarify the epidemiology of firearm deaths in this age group.

Methods and Material.—We retrospectively reviewed firearm deaths using statewide police and chief medical examiner's records for victims under 20 years of age between 1990 and 1994.

Results.—There were 206 firearm deaths during the five-year period. Homicides accounted for 72.8% of the deaths; 21.4% were suicides, 5.3% were accidental, and 0.5% were unspecified deaths. There was no significant change in the number of deaths per year over the study period. Males constituted 93.7% of the victins, and 85.4% were between ages 15 and 19 years. Although only 11.4% of Connecticut residents under 20 are black and 10.2% Hispanic, 47.5% of the victims were black and 27.5% were Hispanic. The firearm mortality for black, Hispanic, and white youths was 20.2, 11.7, and 1.5 per 100,000 respectively. Gun type was known in 72% of cases: 81.4% were hand guns, 18.6% were long guns. Data collection from police files is ongoing.

Conclusions.—Firearms are a major cause of death in children and adolescents in Connecticut. African Americans have a 13-fold higher and Hispanics an 8-fold higher risk than white youths of dying from firearm injuries. Adolescent black males are at highest risk for firearm deaths. Handguns are used in the vast majority of shootings. All physicians caring for children and adolescents need to be aware of the dangers associated with firearms and include a discussion of firearms in anticipatory guidance. The data can be useful in the development of community-based prevention programs and gun control policies and laws.

Antioxidant Enzyme Activity Increased in Adult Type II Pneumocytes Exposed to Hyperoxia

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Abstract.—It is well known that exposure to hyperoxia results in lung damage and development of chronic lung disease. Previous studies have shown increased activities of antioxidant enzymes (AOE) in animals and lung explants exposed to hyperoxia. We hypothesized that one of the cells involved in this response is the type II pneumocyte ($T_{II}P$ exposed to 95% O_2). The goal of the current study was to measure the activities of catalase, gluathione reductase (GR), and gluathione peroxidase (GPX) in cultures of $T_{II}P$ exposed to 95% O_2. Control cells were kept in 95% room air / 5%CO_2 for 24 hours. There were no differences in the pH of the media between control (pH 8.47) cultures. Results indicated mean ±SD values of three to four experiments, done in duplicate. While 95% of cells remained viable after 24 hours in the control group, only 50% of the cells were viable in the hyperoxia group as determined by exclusion of tryphan blue. (AOE in nmol/min/mg protein, adjusted for cell viability.)

Despite the toxicity of the hyperoxic environment, the viable cells showed increased activity of the AOE measured.

It remains to be seen if this is due to activation of inactive enzyme or increased synthesis in response to hyperoxia.

	Control	Hyperoxia	*P* value
LDH release (5)	13.19±0.76%	22.23±4.0%	*P*=.04
Catalase*	4.67±0.73	15.38±2.52	*P*=.016
GR*	20.61±4.27	68.37±12.19	*P*=.008
GPX*	23.8±2.56	71.67±7.93	*P*=.001

*nmol/min/mg protein

Incidence of Respiratory Distress Syndrome and Use of Surfactant Therapy in Infants 23- to 28-Weeks Gestation

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Abstract.—Numerous studies have documented the efficacy of surfactant therapy. Concerns about prophylactic surfactant thereapy remain (eg, treatment of infants without respiratory distress syndrome [RDS], delay in delivery room stabilization of infants, no clear benefit of prophylaxis over rescue surfactant therapy). We asked, "at what gestational age is rescue surfactant therapy almost always used?" We retrospectively analyzed our data in infants born between 1/1/92 and 7/31/94 to determine the incidence of RDS and the frequency with which surfactant therapy rescue is given at each gestation from 23 to 36 weeks. Diagnosis of RDS was based on clinical and radiographic findings. No infants were excluded from analysis. Gestational age was determined by both obstetric estimate based on ultrasound findings and Ballard examination of the infants. The study included 775 infants, of whom 529 infants with RDS received surfactant therapy. The most common reason for not using surfactant therapy was mild RDS requiring no supplemental oxygen. As expected, the incidence of RDS increased from 49.1% at 34-weeks to 94.1% at 23-weeks gestation.

Data for infants 23- to 28-weeks gestation are shown.

Using < 26-weeks gestation to screen for surfactant therapy results in a specificity of 99% and a positive

Gestation (weeks)	N	% with RDS	Surfactant Therapy
23	18	94.1	88.8
24	37	97	78.4
25	27	88	62.9
26	22	95	86.4
27	32	90.6	56.3
28	48	89.6	54.2

predictive value of 96%. We conclude that prophylactic surfactant after initial stabilization of infants born ≤ 26 weeks gestation will be beneficial and few infants will be treated unnecessarily.

Indinavir: A Pharmacologic and Clinical Review of a New HIV Protease Inhibitor

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Introduction

INDIVAVIR (MK-639, L-735,524, Crixivan®, Merck & Co., Inc.) is the most recent commercially available agent of a new class of antiretroviral drugs known as protease inhibitors (PI). This new class of compounds represents a significant advance in the treatment of human immunodeficiency virus (HIV). The Food and Drug Administration (FDA) has an accelerated approval process for drugs involved in the treatment of serious life-threatening diseases, which includes HIV. Under this process the FDA approved all currently available PI: saquinavir, ritonavir, and indinavir. In fact, indinavir represents the most rapid review of an agent thus far, considering the new drug application was filed by the manufacturer on 31 January 1996, and it gained full FDA approval 42 days later on 13 March 1996.

In this report we will discuss the pharmacology and pharmacokinetics of indinavir, and review information gained from recent and ongoing clinical trials regarding its effectiveness.

Mechanism of Action

The mechanism of action for indinavir is the same as for other PI. When considering HIV-1 replication, protease is an essential enzyme that cleaves Gag-Pol polyprotein precursors (core and polymerase) into individual functional proteins (including reverse transcriptase) of infectious HIV. Protease inhibitors bind to protease and prevent it from cleaving viral protein precursors resulting in the formation of noninfectious HIV particles.

The action of PI differs from that of the nucleoside analogues (zidovudine, didanosine, zalcitabine, stavudine, and lamivudine) that competitively inhibit reverse transcriptase in their triphosphorylated (active) form. This blocks viral DNA synthesis and suppresses HIV replication.

Pharmacokinetics

There are no published pharmacokinetic data for indinavir in humans and most of this information is currently on file with the manufacturer. More than likely, this is related to the accelerated FDA review process which has preceded the widespread publication of these types of data other than the manufacturer's package insert.

Absorption.—Indinavir is rapidly absorbed when capsules are taken by mouth on an empty stomach or with a light, low-fat, and low-protein meal.[1] Approximately 60% of an administered dose is absorbed orally and time to peak plasma concentrations is around 0.8 ± 0.3 hours. Peak steady-state plasma concentrations for dosing regimens of 800 mg every eight hours are 12,617 ± 4,037 nM with trough concentrations at eight hours of 251 ± 178 nM.

A 77% decrease in bioavailability and an 84% decrease in maximal plasma concentrations were noted when indinavir was administered with a meal high in calories, fat, and protein.[1]

Distribution.—Indinavir is approximately 60% bound to plasma proteins in humans, the lowest reported for the currently available PI.[1,2] Like the other PI, it does not distribute into the central nervous system.

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Table 1.—Indinavir Drug Interactions[1,13]

Drug		Effect	Mechanism	recommendation
Indinavir	↑	Rifabutin	↑ Rifabutin serum concentrations ↓ Indinavir bioavailability	↓ Rifabutin dose by 50%
Ketoconazole	↑	Indinavir	↑ Indinavir bioavailability	↓ Indinavir dose to 600 mg every 8h
Rifampin	↓	Indinavir	Induced indinavir metabolism by rifampin	Do not give concurrently
Didanosine	↓	Indinavir	Unknown—May need acidic pH to optimize absorption	Give indinavir and didanosine doses 1h apart; give indinavir on empty stomach
Indinavir	↑	Terfenadine Astemizole Cisapride Triazolam Midazolam	Probable inhibition of metabolism by indinavir	Contraindicated, do not give concurrently to avoid potential toxicity

Metabolism.—Indinavir is principally metabolized by the liver into seven identified metabolites. The cytochrome P-450 system (CYP3A4) is the primary enzyme involved in the formation of six oxidative metabolites, while glucuronide conjugation is responsible for the seventh metabolite.[1,3] Patients with mild-to-moderate hepatic insufficiency from cirrhosis have decreased indinavir metabolism and increased half-lives.

Elimination.—Urinary excretion is a minor pathway of elimination for indinavir.[1,3] Less than 20% is excreted unchanged in the urine. The concentration of metabolites in the urine is also relatively low. Carbon-labeled indinavir studies have shown that 83% of the total reactivity was recovered in the feces, 19.1% was due to the parent drug. The half-life of indinavir is 1.8 hours, which is rapid compared to other PI .

Adverse Reactions.—Nephrolithiasis and asymptomatic indirect hyperbilirubinemia are the most common adverse effects noted for indinavir. These occur more frequently with total daily doses greater than 2.4 gm, compared to doses ≤ 2.4 gm per day.

Nephrolithiasis occurs in approximately 4% of patients participating in indinavir clinical trials and has been noted by several investigators.[4-9] Flank pain may also be reported with or without hematuria. Most episodes resolved with hydration and an interruption of therapy for several days and were generally not associated with renal dysfunction.[1] In fact, some of the patients that developed nephrolithiasis did not require a dose reduction or discontinuation of therapy.[4,5] However, it is reported that approximately 9% of patients discontinued therapy after experiencing an episode of nephrolithiasis.[1]

Asymptomatic hyperbilirubinemia (total bilirubin ≤ 2.5 mg/dL) occurs in approximately 10% of patients receiving indinavir.[1] Elevated indirect bilirubin is predominantly reported. Several investigators have also noted hyperbilirubinemia in indinavir clinical trials and report that it is generally reversible.[5,6,8,10-12] This finding does not appear to be associated with elevations in liver transaminases (< 1% increased ALT or AST).

Table 2.—Cost Comparison of Commercially-available Protease Inhibitors

	Dose	Cost per day	Cost per month (30 days)	Cost per year (365 days)	source
Indinavir	800 mg Q8h	$ 16.50	$495.00	$6,022.50	Stadtlanders Pharmacy[a,b,c] (mail order company)
Saquinavir	600 mg TID	$ 19.39	$581.59	$7,076.01	Average wholesale price[b]
Ritonavir	600 mg BID	$ 22.26	$667.82	$8,125.16	Average wholesale price[b]

[a]currently the only supplier at this time
[b]price information as of 8/20/96
[c]cost to patient
Q8h = every eight hours
TID = three times a day
BID = twice a day

Other moderate-to-severe adverse effects reported at a greater frequency for patients receiving indinavir and zidovudine compared to zidovudine alone include: abdominal pain, asthenia/fatigue, flank pain, malaise, nausea, diarrhea, vomiting, acid regurgitation, headache, insomnia, dizziness, and taste perversion.

Drug Interactions

Table 1 summarizes the clinically important drug interactions associated with indinavir. It is known that no clinically significant interactions occur with zidovudine, lamivudine, stavudine, ethinyl estradiol/norethindrone, cimetidine, quinidine, trimethoprim/sulfamethoxazole, fluconazole, isoniazid, or clarithromycin.[1,13]

Dosing and Administration

Indinavir is available in 200 mg and 400 mg capsules. The recommended dosage of indinavir is 800 mg every eight hours (six 400mg capsules per day) with plenty of liquids on an empty stomach or with a low calorie, fat, and protein meal.[1] Patients should drink adequate fluids (at least 1,500 mL per day) while on an indinavir-containing regimen to help maintain adequate hydration and minimize the potential for nephrolithiasis. Dosage reductions to 600 mg every eight hours should be made if the patient is taking concurrent ketoconazole or in cases of mild-to-moderate hepatic insufficiency due to cirrhosis. Indinavir is rated Pregnancy Category C and should not be given to pregnant women unless therapeutic benefit outweighs risk, due to lack of adequate controlled studies and unknown risk of potentially worsening physiologic hyperbilirubinemia in neonates.

Availability and Cost

Indinavir is currently the least expensive PI and is available only by mail order through the Stadtlanders Pharmacy (600 Penn Center Boulevard, Suite 300; Pittsburgh, PA 15235, telephone 800-238-1548, hours 8:30 A.M. to 9:00 P.M. EST). At this time, the manufacturer is not committed to a definite target date, even though efforts are being made, for full scale production and widespread distribution to wholesalers. Comparative cost information may be found in Table 2.

Clinical Trials

Preliminary results from several Phase I and Phase II indinavir trials have been reported.[4-12] Several months of data have been collected from these studies and the results are impressive. Additionally, several Phase III trials which were initiated in the spring and fall of 1995 are also ongoing. Early findings from several of the studies are reviewed below. It is important to note that a new laboratory test known as viral load, has emerged as an important marker for determining the progression of HIV and patient response to antiretroviral regimens.[14,15] It is being widely used in current clinical trials to assess the effectiveness of PI treatment regimens.

Nucleoside agent experienced patients.—Indinavir has been evaluated in patients with AIDS who have previously taken a reverse transcriptase inhibitor regimen.[4,8,10] In each of these trials, sustained decreases in HIV RNA (viral load) and increases in CD4 counts were noted. Serum HIV RNA levels were decreased by a median of 1.98 $\log_{10}$ after eight weeks of indinavir therapy (600 mg every six hours) in one Phase II open-label study involving 16 patients.[8]

In follow-up data from an open label Phase 1 evaluation of indinavir (dose not specified), it was reported that mean RNA copies/mL at 60 weeks remained around 1.5 $\log_{10}$ below baseline in five patients.[10] Four of the patients added previous nucleoside therapy regimens at 24 weeks. Additionally, a sustained increase in patient weight was also noted.

Indinavir has also been studied in a three-arm, randomized, double-blind study that compared indinavir alone, zidovudine with lamivudine, and indinavir with zidovudine and lamivudine in 97 adult patients.[4] Doses used in this study were indinavir 800 mg eight hours, zidovudine 200 mg every eight hours, and lamivudine 150 mg every 12 hours. A sustained, 2.2 $\log_{10}$ decrease in median HIV RNA was noted at 44 weeks for the triple therapy regimen. A 0.9 $\log_{10}$ decrease was reported for the indinavir alone group, and a 0.2 $\log_{10}$ decrease was observed for the double reverse transcriptase regimen compared to baseline. Even more impressive is the fact that 83% of the triple therapy group had levels of HIV RNA below the assay detection limit (< 500 copies/mL) at 32 (19 of 23) and 44 weeks (five of six). In the indinavir alone group, 36% (eight of 22) at 32 weeks and a 22% (two of nine) at 44 weeks were below the assay detection limit. No patients were below the HIV RNA assay detection limit for the zidovudine and lamivudine arm for the reported timepoints. Pretreatment baseline HIV RNA levels for patients participating in this study were all ≥ 20,000 copies/mL.

Nucleoside agent naive patients.—Indinavir has also been evaluated in patients with AIDS that have not taken previous antiretroviral therapy.[6,7,9] In a 24-week, open-label, randomized study involving 78 patients, indinavir alone was compared to zidovudine with didanosine, and indinavir with zidovudine and didanosine.[6] Doses used in this study were indinavir 600 mg every six hours, zidovudine 200 mg every eight hours, and didanosine 125 or 200 mg every 12 hours (based on weight). These investigators concluded that the combination of indinavir with two nucleoside analogues resulted in greater and more sustained declines in viral RNA. Maximal median

declines in RNA were: 3.1 $\log_{10}$ decrease for the triple combination, 1.9 $\log_{10}$ decline for indinavir alone, and a 1.5 decrease for zidovudine with didanosine. Additionally, 60% of patients in the triple combination group had HIV RNA levels < 200 copies/mL at 24 weeks. Baseline RNA values for all subjects were ≥ 20,000 copies/mL. Sustained increases in CD4 counts were also noted for all indinavir-containing arms.

A separate study compared indinavir 600 mg every six hours alone, zidovudine 200 mg every eight hours alone, and indinavir with zidovudine in combination.[7] In this multicenter, double-blind, randomized trial involving 73 patients, a 2.5 $\log_{10}$ decrease in serum viral RNA levels was observed for the combination group at 24 weeks. A 1.5 $\log_{10}$ decrease was noted for indinavir alone and only a 0.3 $\log_{10}$ decline was reported for the zidovudine alone group.

Another, double-blind trial has also compared indinavir and zidovudine alone and in combination in 224 zidovudine and protease inhibitor naive patients.[9] In this study indinavir was given 800 mg every eight hours and zidovudine 200 mg every eight hours. The investigators noted a 1.09 $\log_{10}$ decrease in serum viral RNA levels for the indinavir with zidovudine group at 24 weeks. A 0.86 $\log_{10}$ decrease was noted for the indinavir alone group and a 0.27 $\log_{10}$ decrease was noted for zidovudine alone.

Discussion

Early clinical trials have demonstrated that an indinavir-containing antiretroviral regimen can dramatically reduce the amount of circulating HIV in patients with this disease for as long as 60 weeks.[10] Results have been more impressive and sustained when indinavir was used in combination with reverse transcriptase inhibitors. Additionally, increases in CD4 counts have been noted in all clinical trials.

There is no doubt that PI can alter the course of HIV disease for several months. A survival benefit has already been shown for saquinavir and ritonavir.[16,17] Although a survival benefit has not yet been demonstrated for indinavir, it is expected to have a positive effect on the outcome of HIV infected patients who use the drug, based on its impressive reduction in viral load.

Issues regarding PI resistance are currently being evaluated. It is known that high level resistance to both indinavir and ritonavir is not conferred by any single mutation or pair of mutations, but is rather the result of stepwise accumulation of multiple mutations.[18] Indinavir-resistant virus is cross-resistant to ritonavir and other PI in development. A 60% to 80% rate of cross-resistance was observed between indinavir and saquinavir or VX-478/141W94, an investigational PI.[19] Secondary issues regarding resistance are that appropriate doses of drug must be used, patients must strictly comply with PI regimens, and use of combination therapy (PI and nucleoside agents) probably delays the development of resistance. Recently, new treatment guidelines have been released.[20] Clinicians should refer to these when considering the use of indinavir, especially with respect to combination therapy.

The pharmacoeconomic benefits of costly PI therapy have yet to be studied. Theoretically, if patients could comply with and tolerate combination therapy regimens, a decrease in hospital admissions for treatment and evaluation of opportunistic infections and other AIDS-associated illnesses could occur.

In summary, indinavir appears to be a well-tolerated medication with potent activity against HIV. It is expected to significantly decrease mobidity and improve survival for individuals infected with HIV.

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The Physician as Poet

With HMOs—Well, Who Really Knows?

Employers got nervous with just fee for service,
their medical bills were too high
So they gave up their voice and physician choice
to give HMOs a try.
But how we now cringe that this rationing binge
has sidetracked good care and health
Which today is replaced by a shiny new face,
the accumulation of wealth.
What we hope now prevails is a lifting of veils
to reveal the HMOs' greed,
To see through the sell and pull out of hell
subscribers who are truly in need.

With HMOs—well, who really knows,
since data collection's not done;
Now they are aware the data are there,
it's just a function they shun.
It's hard to take looks at their open books,
there's little they must disclose;
So what really occurred is oddly obscured
and lines pockets for their CEOs.
They limit access while alleging success
and to customers they state
How much has been saved by excesses they've shaved
and then they raise the rate.

But God save your soul if you've a bad mole
or are losing your body hair,
Or a cyst pilonidal or you're suicidal
and need a specialist's care
If you've a strange rash, then you'd better have cash
for a skin doc you'll never see;
You'll first be deterred from being referred
for medical necessity.
It takes a magician to get past that physician,
your primary care designee,
Who must be a whiz to manage the biz
and is called a PCP.

On them you depend, but they must defend
the profit; on them is the onus
To keep the costs low (as to treatment you go)
so executives share in a bonus.
Now physicians who care feel great despair
that they must so closely ration,
But if they want work, they should act like clerks
and try to stifle all passions.
If they want to be good, then like Robin Hood
they steal from the lords of risk pools.
It's not treating disease or suffering to ease,
it's the almighty dollar that rules.

Deborah Smith Parker
San Diego, California

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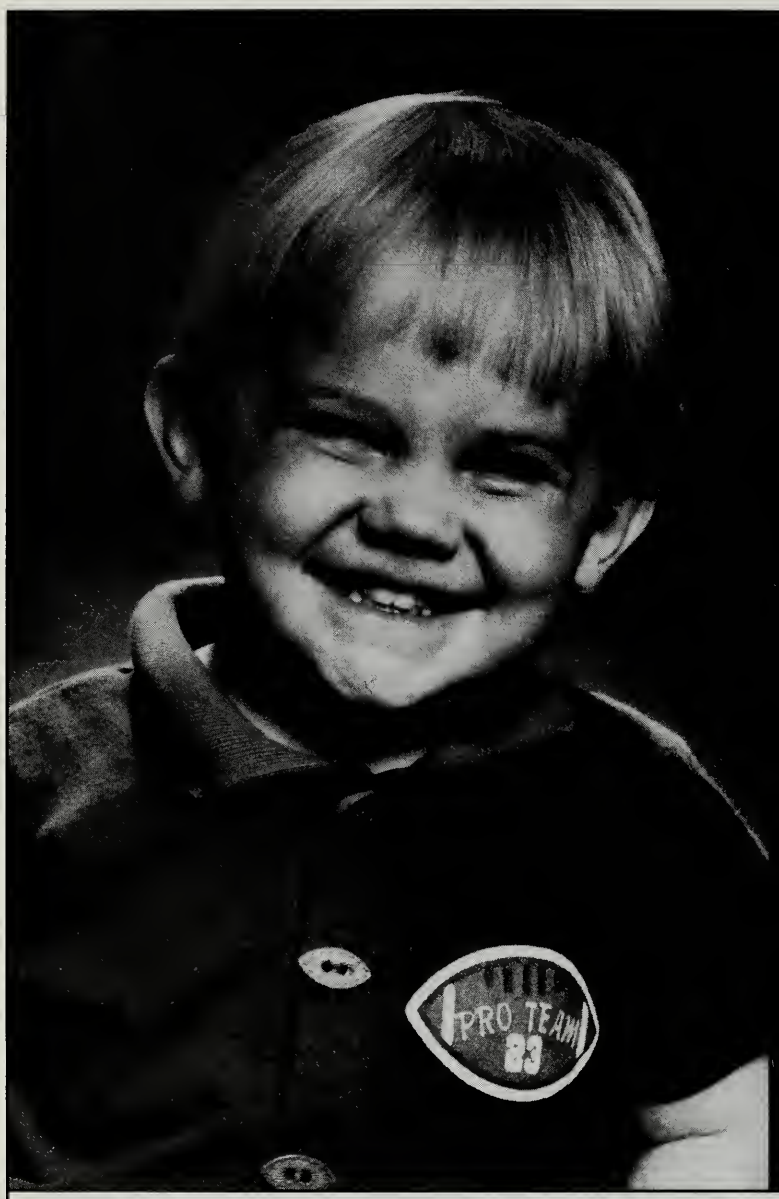

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B is for Ball,

C is for Cancer.

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Napoletano *vs* CIGNA: An Evolving Standard of MCO Legal Compliance?

JOSEPH J. SELINGER, JR., ESQ.

Introduction

In *Napoletano et al, vs CIGNA Healthcare of Connecticut*, and *Hollis et al, vs CIGNA*, 238 Conn. 216 (1996), the Connecticut Supreme Court recently fired a shot across the bow of managed-care organizations (MCOs) which should cause them to reassess compliance with the laws and documents that govern their relations with members and physicians. In *Napoletano vs CIGNA*, certain plan physicians, who had been terminated by CIGNA, charged CIGNA with: (i) breach of contract; (ii) breach of an implied covenant of good faith and fair dealing; (iii) tortious interference with business expectancies; (iv) violation of the Connecticut Unfair Trade Practices Act (CUTPA); and (v) violation of P.A. 94-235, relating to filing of preferred provider networks and credentialling criteria with the Office of Healthcare Access (OHCA). In *Hollis vs CIGNA*, certain plan members, who had been treated by the physicians terminated in *Napoletano*, charged CIGNA with: (i) misrepresentation; (ii) violations of the CUTPA; (iii) violations of the Connecticut Unfair Insurance Practices Act (CUIPA); and (iv) violating Public Act 94-235.

The specific holding of the Court, significant in itself, was that these charges are not preempted by ERISA and that a private cause of action exists under P.A. 94-235. However, in the course of piercing the ERISA defense and establishing this private cause of action, the Connecticut Supreme Court's discussion of the underlying allegations may not bode well for CIGNA on the merits and should put other MCOs on notice to tread carefully in similar circumstances. Here is what happened.

JOSEPH J. SELINGER, JR., ESQ., is a partner in the New London and Hartford law firm of Tobin, Carberry, O'Malley, Riley & Selinger, P.C.

Facts

In *Hollis*, the plaintiff commenced cancer treatment with a physician in the CIGNA network. After several months of treatment, CIGNA unilaterally removed the treating physician from its list of participating physicians. CIGNA sent a letter to Hollis announcing changes to its network that CIGNA said would help it achieve a "comprehensive network of quality doctors who meet its credentialling standards." Because his doctor allegedly satisfied CIGNA's criteria, but nevertheless was removed from its list, Hollis alleged this letter misrepresented the credentialling standards. Three months later, CIGNA sent Hollis another letter stating that should his doctor choose not to re-enroll in its plan, Hollis' care would be transferred to another participating doctor. According to Hollis, this letter was false also, because CIGNA had unilaterally removed his doctor from the network. CIGNA then allegedly placed an advertisement in the *Hartford Courant* misrepresenting the physicians who had been allowed to file applications to re-enroll in CIGNA's network, which contained the name of Hollis' physician. Finally, CIGNA allegedly sent Hollis a directory of providers which included his physician. The directory failed to inform enrollees that participating physicians could be removed from the list without notice. Additionally, Hollis alleged that CIGNA violated P.A. 94-235 by removing his physician from the network without advising Hollis of the criteria for removal, despite having listed his physician as a CIGNA provider with OHCA.

In *Napoletano*, the physician plaintiffs claimed that, despite satisfying all of CIGNA's credentialling standards, they had been unilaterally terminated without just cause and that, despite continuing to satisfy credentialling standards, they had been denied the opportunity to re-

enroll in the CIGNA network. The physicians claimed further that CIGNA had misrepresented to plan beneficiaries that each physician in the directory of providers would remain in the network throughout the length of CIGNA's annual contract with the patient. Moreover, by removing each physician from CIGNA's plan while such physician was listed as a provider in CIGNA's filing with OHCA as mandated by P.A. 94-235 and by rejecting each physician without advising him of the criteria employed, CIGNA allegedly violated P.A. 94-235.

Analysis

Relying largely on the United States Supreme Court's decision in *Travelers Insurance Co.*, 115 S.Ct 1671 (1995), the Connecticut Supreme Court held that ERISA does not preempt the causes of action alleged against CIGNA, because the plaintiffs' claims would not impose substantive mandates on an employee benefit plan, but " ... merely turn on requiring CIGNA to enforce the benefit plan that it has already established and is maintaining." This holding opens the door to a broad spectrum of claims against MCOs based on contract violations, statutory violations, and misrepresentations that relate to the benefit plan. Perhaps as important as the procedural ruling is the Court's description and analysis of the nature of the benefit plan and the rights, obligations, and expectations of plan members and physicians under or relating to the benefit plan. In effect, the Court suggests there is a pool of information consisting of plan documents, statutory filings, and communications to members and the public which can create rights and obligations based on "reasonable expectations" of members and physicians.

Regarding the rights and expectations of plan members, the Court noted that, as alleged, "... the *Hollis* plaintiffs, therefore, could reasonably presume that as long as their physicians continued to meet the credentialling criteria and did not meet any of the reasons for discharge, that they would continue to be providers under the plan. Furthermore, even if P.A. 94-235 did not exist, the *Hollis* plaintiffs could reasonably expect that their physicians would continue to be providers under the plan for the duration of the physicians' contracts with CIGNA and would not be unilaterally terminated" (emphasis added).

Regarding the physician claims, the Court noted, "The *Napoletano* plaintiffs reasonably believed that they would continue to be providers under the plan, so long as they met the criteria that P.A. 94-235 required that CIGNA provide for the duration of their contracts. The *Napoletano* plaintiffs are merely asking that their relationship with CIGNA be managed in accordance with a specific filing that CIGNA has made with the state in which CIGNA was required to indicate the criteria by which it would select and could discharge providers, as well as in accordance with their one year contracts with CIGNA" (emphasis added).

Regarding the alleged breach of P.A. 94-235, the Court reasoned that, "Neither class of plaintiffs is requesting that CIGNA change the method by which it determines which physicians will be providers under its plan—in other words, plaintiffs are not claiming that CIGNA should change its list of criteria. Instead, the plaintiffs are merely asking that CIGNA disclose its criteria and, subsequently adhere to them." Thus, the Court concluded there is a private cause of action under P.A. 94-235 that prohibits termination of a physician based on criteria not disclosed under the P.A. 94-235 filing, which is not preempted by ERISA.

Conclusion

In interpreting the allegations in *Napoletano vs CIGNA*, the Court was only laying the foundation for purposes of its procedural decisions on preemption and the private cause of action under P.A. 94-235. For such purposes, the Court was required to construe all allegations in the light most favorable to the plaintiffs and was not passing judgement on the merits of the allegations. However, the tone and nature of the Court's discussion of the allegations is consistent with what appears to be a trend of courts to restrict the discretion of MCOs, including the termination of physicians, in ways that are inconsistent with the "reasonable expectations" of patients and physicians. Courts are not immune to changing with public attitudes, and it may well be that the current concern over MCOs is making itself felt at the judicial level as well. For example, in a recent New Hampshire case, the New Hampshire Supreme Court held that, despite the "without cause" termination clause of the provider agreement, an MCO provider agreement must be fair and consistent with the public interest; furthermore, the termination decision is governed by an implied covenant of good faith and fair dealing, and may not be made for a reason that violates public policy. It appears that the Connecticut Supreme Court may be heading in the same direction.

In the meantime, dissatisfied patients and physicians now have a private cause of action under P.A. 94-235 to contest the termination of physicians from plan panels. Dissatisfied patients and physicians can be expected to pay more attention than ever to: (i) plan documents, eg, subscriber handbooks, physician directories, and physician handbooks; (ii) administrative filings, eg, DOI or OHCA; and (iii) public communications, eg, member communications and advertisements, as a basis of determining their rights and recourse against MCOs. Description of the plan network, credentialling criteria (medical and economic), prior utilization review and quality management are just some of areas where potentially inter-

ested or aggrieved parties may (and MCOs should) check to insure that the benefits of the plan are not overstated or that the conditions and requirements of coverage and treatment are not understated. Material inaccuracies, including omission of information that should be included to make other information not misleading, may create liability and exposure of MCOs to dissatisfied patients and physicians whose treatment has been inconsistent with the reasonable expectations created by the aforementioned pool of information.

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50 Years Ago
From *The Connecticut State Medical Journal*
December 1946

A Second Medical School

The report of a committee of the Hartford County Medical Association on the advisability of establishing a second medical school in Connecticut ... demands reading in its entirety, for it is a careful and thoughtful analysis of a subject which has important interest for all of us. Two points of emphasis seem clear. One is that the location of a medical school has no bearing on the distribution of medical students, and the other is that the place of origin of medical students has no relation to the choice of location for practice; rural youths do not develop into rural physicians. The idea of State subsidy for needy students seems worthy and the question as to whether existing medical schools can increase enrollment is a matter for further consideration. It is interesting that the thinking of the committee should have directed itself also to postgraduate medical education, because it emphasizes again the obvious need for further development at this level. The development of a coordinated teaching program in our hospital centers would not only increase the amount and quality of intern and resident training but education at a higher level might be developed, especially if a type of program was put into effect such as that recommended by the Subcommittee on Intern Curriculum of the Connecticut State Postwar Planning Board.

There is little question that the type of intern and resident training which is centered around a medical school or "teaching" hospital offers a great deal which is desired, but it must be plain that this type of hospital center cannot supply but a part of the demand. That training equally as valuable can be developed in other large hospital centers is a question which must in some way be answered. The suggestion that State funds could be used to aid this purpose seems like sound economy.

Dr. Landry and his associates have done an excellent job which has many important values, not the least of which is the call for other interested groups to consider not only these needs but others which will serve to bring adequate medical care to the people of Connecticut. Although the conclusion of the committee as to the need of the establishment of a second medical school at this time is answered in the negative, it is certain that the opening of new avenues of approach to medical education, especially to postgraduate education, will be stimulated by the thoughtful deliberations of this report.

What an American Says

(Excerpts from the paper delivered by Senator Robert Taft at the first general meeting of the season of the Wayne County Medical Society, October 7, 1946.)

"A compulsory levy of this kind is a tax, because it deprives the employee of his freedom of choice in the spending of money which he earns.

"I am strongly opposed to any socialization, by state or nation, of medical care, except medical care to those unable to pay for it because of their financial condition. Above all, I deplore the federalization of medicine. Medical care has always been a function of the state and local governments. Under our Constitution that is where it belongs.

"Our experience is that any attempt to regulate the affairs of all the people, of the average citizen in forty-eight states, is usually both tyrannical and inefficient. Administration by states and local government is generally democratic. Administration by Washington boards and bureaus is tyrannical. The political patronage involved would be tremendous. I cannot conceive of a measure which will more greatly extend the power of the state or move further in one jump towards an all-powerful central government, than federal compulsory health insurance.

"On the other hand we must all recognize that from an overall national standpoint medical care is not adequate. There are gaps in the service which is rendered.

"The Murray-Wagner-Dingell bill is not an effort in good faith to make our medical service better, but to scrap the present system, and control all medicine and all doctors from Washington. The difference between the government looking after the indigent and looking after the entire population is a fundamental issue. One principle has always been embodied in the law of every free Anglo-Saxon people; the other is socialism.

(continued on next page)

Reprinted from the *Connecticut State Medical Journal*, December 1946.

Conclusion.—"The question which I have been discussing is partly a medical question, but above all it is a governmental question. I hope the doctors will take an active and continuous interest. If the doctors take the position that everything is rosy in the best of all possible worlds, and nothing need be done, they are likely to be swamped politically by the demand for increased medical service. I have felt that the attitude of some of the medical associations has been almost completely negative. It is up to the doctors to recognize that there is a problem and to take an active part in working out the solution to that problem. The bill which we have presented is not perfect. Every word should be examined and considered. But if the doctors do take an active part, they will have the enthusiastic cooperation of that large majority of Congress who fear more than anything else in the world the increased concentration of power in the hands of federal bureaus. It is up to us to show that a government based on liberty of the individual, of the professions, and of local communities can assure better social service to its people than the most efficient of socialistic states."

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Healers Not Hit Men

The Connecticut State Medical Society and the American Medical Association have a long-standing and unequivocal position on physician-assisted suicide. Both organizations feel strongly that physician-assisted suicide is against the Code of Medical Ethics and is incompatible with the physician's role as caregiver. The Connecticut State Medical Society supports efforts to educate physicians in improved ways to treat physical pain and meeting the psychological needs of patients at the end of life. With physicians providing greater support, comfort, and adequate pain control, there would be no need for euthanasia and assisted suicide.

Physicians are obliged to relieve pain and suffering and to promote the dignity and autonomy of dying patients in their care. When it is clear that healing is no longer an option, physicians are faced with the difficult challenge of helping their patients and families confront death. The Connecticut State Medical Society supports greater reliance on hospice care and treatment of psychological aspects of terminal illness, which may help to alleviate the suffering that leads patients to seek physician-assisted suicide.

Physician-assisted suicide is the direct taking of a patient's life and must never be condoned by the medical profession. It would undermine the very basis of patient care and trust. The physician's inability to prevent death does not give us the right to take life. Physicians must honor a patient's wishes concerning end-of-life decisions, especially that their dying not be prolonged by unusual or excessive means. The physician's role is one of advocate, partner, and educator working with patient and family to help in the final chapter of an individual's life.

Patients are often worried about loss of control, loss of dignity, and the burden that they may be on their families at end of life. These concerns must be acknowledged and dealt with in a compassionate way by working with the patient, their caregivers, family, and clergy.

Physician-assisted suicide is inconsistent with the physician's role as advocate. The pressures to seek assisted suicide and euthanasia would be disproportionately felt by the economically disadvantaged, the disenfranchised, and other vulnerable groups who lack the financial and social supports necessary to withstand such pressures. We should emphasize to patients that there are choices at the end of life including hospice, advanced directives, and effective pain management. Patients should know that their doctors will not abandon them at this time but will continue to stand by them and see them through their most challenging final chapter in life.

Although the recent decision of the Second U.S. Circuit of Appeals in New York suggests that physician-assisted suicide may be legal, a ruling that is under appeal to the U.S. Supreme Court, the ruling should not be viewed as making it ethical for physicians to practice euthanasia. Because an act is legal does not make it ethical. There is, after all, a difference between what is legal and what is ethical. For example, attorneys under certain circumstances engage in fee splitting. This is certainly legal. In the medical profession fee splitting is always unethical although certainly legal.

There is also a difference between patients' desire to commit suicide on their own and assisted suicide. Organized medicine's position on physician-assisted suicide does not preclude an individual's right to take his or her own life, although physicians are obligated to attempt to dissuade their despairing patients from suicide.

Patients do not have the right to force physicians to assist them in their suicide, a right the appeals court ruling may imply. This fact should be made clear. Patients, however, do have the right to expect their physicians to give compassionate care at the end of life and never to abandon them at this most difficult final life chapter.

(continued on next page)

Regardless of court decisions and public opinions, our ethical standards are higher than judicial or legal opinions. No court, no judge, no judicial system, including the U.S. Supreme Court, can change our ethical code, especially when that code is based on 2,500 years of tradition and has stood the profession in good stead these many years. This ethical position is based on sound philosophical and practical ethics. Theology need not be invoked and in fact theology, in my estimation, should be kept out of the argument.

A pathologist in Michigan has recently brought the issue of assisted suicide to the forefront. One can only be resentful that this pathologist has taken the life of nearly 50 people, depriving these patients of the help caring physicians could have provided. Some of these patients may have had easily treatable depression or controllable pain. The proper treatment of depression is medication, not carbon monoxide.

The Hippocratic Oath forbids the taking of life. Physicians are healers, not hit men.

Michael M. Deren, M.D.
President

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The Industrialization of Medicine

ROBERT U. MASSEY, M.D.

WHEN I was in the eighth grade, in a class called General Language, the teacher chose several of us to debate the proposition, "It is not possible to think without words," and, of course, we settled nothing. Now since the structuralists and the deconstructionists have sown their confusion, questions about thought, words, and reality can no longer be framed intelligibly.

We think, or rather I think I do, mostly by talking to ourselves. Our ancestors moved their lips when they read silently. Surely something happens somewhere between our conscious and unconscious selves, somewhere in the left cerebral hemisphere, before the word is ever formed, but the word once chosen then reshapes reality, coloring and biasing the original idea. You recall that in Orwell's *Nineteen Eighty-Four,* Newspeak "... had been devised to meet the ideological needs of Ingsoc, or English Socialism." It made "all other modes of thought impossible."

Society's guardians, levelers all, are busily transforming English usage into a kind of Newspeak making our world view coincide with theirs. Medicine has been turned into, and therefore must always have been, the health-care industry. Consider how those words bring up images of manufacturing, trade, large corporate enterprise, profit making, production (as an old Detroiter I see the Rouge plant with its coke ovens and smoke stacks).

Healthcare (now one word) and health maintenance are Madison Avenue talk, promising what can never be. Even medical schools and their hospitals have become academic *health* centers. In his 1966 book, *Ferment in Medicine,* McGraw never mentions health care, only medical care. In the 1966 Millis Report, *The Graduate Education of Physicians,* the authors have included a section on "Health Care," but it treats only of sanitation, immunization, public health, dietary instruction, physical fitness programs, as well as of agriculture, engineering, and education—things having to do with keeping the public's health, not caring for the sick. Health care, meaning the professional work of physicians, nurses, allied medical sciences, and hospitals, came into common usage only in the late 1960s with the effort to convert medicine into an amalgam of social science (apologies to Prof. Virchow) and industry.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

Even more pernicious, patients are now consumers, customers, or clients—"lives" to the insurance moguls, to be bought and sold—and in the collective, they represent markets. Physicians are providers, and "deliver healthcare." Hospitals compete to grab market share by "expanding their product lines," and are members of a trade association. Young physicians deciding on where to practice consider "lifestyle," a word not in my 1971 Webster's, which opens them wide to the temptations of the "Firm." A distinguished surgeon from the University of Texas was courted by a California for-profit HMO with the offer of a million dollar salary, a mansion, and a Jaguar. He had the guts to say "No."

In an editorial regreting the tragic, violent deaths of Dr. John D. Haugh and his wife Patricia in West Hartford last month, the Hartford *Courant* referred to Dr. Haugh as Mr. Haugh and never mentioned that he was an orthopedic surgeon. A distinguished older physician, a patient at the Memorial Sloan-Kettering Cancer Center several years ago, was regularly addressed as Mr., or just as often by his first name, by "healthcare workers" who had never known him before. Let's have no elitism around here!

Do churches and synagogues and their staffs constitute the "God industry" or "Religion industry"? Surely it won't be long before their members are described as clients, customers, consumers, or "giving units." Are courts and judges part of the law industry? And the schools? Education is surely an industry because its "workers" are unionized, as are some professors, but we still cringe hearing education called an industry.

These words change the way the public and their masters, and even some of us "healthcare providers" see the world; changing a historic profession into a cynically commercial profit-pursuing service trade is no problem: devise a Healthspeak that will make "all other modes of thought impossible." A retired colleague called me the other night from Florida, "You know, Bob, it would be so easy. The doctors only have to say 'No'! After all, these guys can't make it without us." Easier said than done. Too many have already gone over to the other side; "you've got to go with the tide, it's the future," they say.

I think our patients may make us wake up; they are discovering that care "delivered" by profiteering healthcare corporations is not quite what they had in mind when they granted us a license to practice medicine.

Here's Our Agenda

It's simple. It's straightforward. And it represents the future of medicine. The American Medical Association presented to the Republican and Democratic leadership this agenda for the upcoming 105th Congress. Your AMA membership strengthens our voice in support of physicians and their patients. . . and will enhance our efforts to turn these goals into reality.

- **Patient Protections** Above all, preserve the ability of physicians to act as advocates for their individual patients. Do not allow insurers to "gag" physicians or withhold medically necessary treatments from their patients.

- **Medicare Reform** Make the Medicare program solvent. Expand patient choice of plans. Allow future growth rates that cover patients needs. Retain special protection for the vulnerable and elderly.

- **Medical Education and Research** Continue to support medical education and research so we can find cures for killers such as AIDS and cancer.

- **Public Health Problems** Expand prevention and treatment programs to combat AIDS, drug abuse, smoking and violence. These problems cost billions of dollars and millions of lives.

- **Liability Reform** Enact meaningful liability reform to ensure fair compensation to patients with legitimate claims while eliminating excessive malpractice awards that lead to defensive medicine.

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This Month's Reading in Review

TIMOTHY B. NORBECK

"Some managed-care groups have set off an ominous medical trend by refusing to pay for overnight hospital stays for mastectomies. More proof that dollars and cents, lower expenses and higher profits matter most to many players in the managed-care game. That's why Congress has a responsibility to step in with more patient-protection regulations."

An editorial from the *St. Louis Post-Dispatch* (4 October 1996)

A study published in the October 2 issue of *JAMA* found that "Patients who were elderly and poor were more than twice as likely to decline in health in an HMO, as in a fee-for-service plan." The researchers said their findings, based on observation of 2,235 patients in Boston, Chicago, and Los Angeles, should send "a cautionary note to policy makers."

New York Times (2 October 1996)

"These findings are an indictment of the whole notion that we are going to be able to cut costs, and the cuts will have the same effect on everybody."

John E. Ware, Jr., M.D., of the New England Medical Center, Boston, and author of the 2 October 1996 *JAMA* study.

Sixty-nine percent of the nation's 1.5 million nursing home residents are supported by Medicaid.... Meanwhile, the over-85 population is the fastest-growing age group, prompting the Census Bureau to project a 22% increase in the number of elderly living in nursing homes by the year 2000.... That growth is expected to help keep the $165 billion-a-year Medicaid program rising at an annual rate of 10%.

Business Week (30 September 1996)

Donations to the nation's blood supply have been steadily declining over the past 12 years.... Fear of AIDS and increasingly stringent safety requirements are preventing people from donating, at least temporarily.... People with new tattoos or pierced body parts, or who have spent more than 72 hours in jail, must wait a year before donating blood.

AP/Deseret News (6 October 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Just in case you were wondering what the next health insurer cost-savings scheme might be after the "drive-by deliveries" and the "drive-through mastectomies," wonder no more.... An Illinois HMO (Health Alliance) is telling doctors that its "goal length-of-stay" for heart bypass surgery is three days.... The three-day LOS "would represent a greater than 60% decrease in the average hospital stay for bypass patients.... The associate medical director of Health Alliance explained that the guidelines were from the health-care management firm of Milliman and Robertson and approved by a "panel of experts."... However, when asked who the experts were, "he said he couldn't remember them and didn't have a list."

Springfield (IL) State Journal-Register (26 September 1996)

"What's inevitable is a massive rebellion. I don't know that we'll ever go back to fee-for-service medicine, but the commercialization of health care won't sweep the nation without a backlash such as you see in California, to restore the values of healing to the health care system."

Harvey J. Rosenfield, a consumer advocate, commenting on Proposition 216 which comes before California voters on November 5. Prop. 216 would place limits on premium increases, impose fees or taxes on health care mergers and create a "watchdog" board to oversee health plans. *New York Times* (3 October 1996)

According to the Alzheimer's Association, the U.S. currently spends between $80 and $100 billion a year on costs related to Alzheimer's, "making it the third most expensive disease in the country." Ten percent of Americans 65 or older suffer from the disease, according to the association. It also reports that seven out of 10 Alzheimer's patients live at home, while the remaining patients are cared for in nursing homes or other institutions. Since the risk of developing Alzheimer's increases with age, most Alzheimer's patients "are in the seniors age group targeted by Medicare HMOs."

Crain News Service/Business Insurance (7 October 1996)

Only in America: In July in Dadeville, Alabama, a Mr. Gabel Taylor, 38, who had just prevailed in an informal Bible-quoting contest, was shot to death by the loser.

Washington City Paper (9 August 1996)

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

In Response to Dr. Deren's "Hares and Hounds"

To the Editor: Of course, Dr. Deren was correct when he said that the CSMS cannot take sides when conflicts arise between physicians' groups.[1] In particular, he referred to the turf war for primary care in which family practitioners and general internists, unfortunately, have closed ranks against obstetricians-gynecologists.

The CSMS could help the situation by pointing out how misleading the term "primary care" is, and how it has done nothing to clarify our understanding of how to deploy our workforce.

"Primary care" is an artificial distinction imposed on physicians by the insurance industry. More than anything else it facilitates reimbursement procedures for insurance companies by identifying physicians' services. Originally, the term was used incidentally to differentiate between the "continuing care" given by general practitioners and the "episodic care" given by hospital specialists.[2] I doubt its creators had any intention of using "primary care" as a label to distinguish different categories of physicians.

Many types of physicians are capable of providing some "primary care" depending upon their interest, their skill, and the desires of their patients. Out of necessity, some physicians deliver "primary care" because there is no one else around to do it.

For some physicians, "primary care" has become so diluted that it has become almost useless for intelligent conversation. I can't think of any other term that has caused so much unhappiness, insecurity, and overt hostility among ourselves.

Indeed, in its current usage, "primary care" is so ambiguous and imprecise that it actually detracts from the general practitioners for whom it was intended originally. It only obscures that which our common sense tells us should be clear.

Not long ago when this war of words began I commented on the growing use of "generalist" as an improvement over "primary care doctor."[3] I was wrong. "Generalist" doesn't improve our understanding at all. It only perpetuates our confusion.

It is interesting that "general practitioner" conjures up a clearer image in most people's mind of what we are trying to express with today's "primary care physician." If we had kept it, perhaps we would not be wasting time today trying to fit ourselves into definitions that are too tight or too big. The term "family practitioner" inadvertently brought about the demise of "general practitioner."

The Institute of Medicine, chartered by Congress in 1976 to study issues that pertain to the public health, recently—with a 19-member committee consisting of professors of medicine, hospital administrators, health insurers, health-care economists, managed-care CEOs, and representatives from nurse practitioner, physician assistant, and nursing programs—has proposed a practical definition of 'primary care." It states that: *"Primary care is the provision of primary care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients and practicing in the context of family and community."*[4]

It also states that "primary care" may be provided by *any individual* who uses proper judgment, knowledge, and legal authority to treat patients.

The time and effort involved in producing this definition must have been tremendous when one considers how broad the committee's representation was that created it. Those involved deserve our thanks. But their hard work may not have been necessary if we had been more perspicacious in our use of language.

"Primary care" has lost its usefulness, and like "lumbago," "St. Vitus's Dance," and "hare lip," it should be discarded.

For practical purposes, we're better off using "family practitioner" and "general internist." Then the obstetrician-gynecologists could simply do what they've been doing—providing minor "primary care" services to their patients who consider them their personal physicians. This would do away with a lot of unnecessary tension among colleagues. It would also give us more time for more serious issues, like regaining control of medicine again.

The lesson to be learned from all our semantic jousting is that our methods for settling turf battles desperately need to be improved. If we are going to improve our understanding of each other's roles we need discussion at the local level. This means participation at county and local medical societies. From there, local representatives can then bring a sense of the issues to the leadership at the state medical society.

Until we have effective mechanisms to participate in our politics locally, reaching consensus and acting in concert will be impossible; and we will continue to be subjected to ruthless but very efficient forces outside of us.

Edward J. Volpintesta, M.D.
Bethel

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1. Deren MM: Hares and hounds. *Conn Med* 1996; 60:625.
2. White KL, Williams TF, Greenberg BG: The ecology of medical care. *N Engl J Med* 1961; 265:885-92.
3. Volpintesta EJ: Primary care doctor or generalist? *Conn Med* 1994; 58:683-4.
4. Donaldson M, Yordy K, Vanselow N (eds): Defining Primary Care: An Interim Report. National Academy Press, Washington, D.C. 1994.

In Response to Dr. Catrini's "CSMS-IPA"

To the Editor: I would like to respond to Dr. Vincent Catrini's letter that appeared in the October 1996 issue of *Connecticut Medicine* regarding his comments about the initiative of MedServ of Connecticut, Inc., the administrative services corporation jointly formed and owned by the Hartford County Medical Association and the New Haven County Medical Association, to start a physician-owned and physician-controlled HMO—Physicians Care for Connecticut, Inc. This response should not be misinterpreted as a denigration of any of the accomplishments of CSMS-IPA. I respect the efforts it has made over the years to represent its physician members.

The issue that I believe is important to address is a fundamental one. It concerns who or what entity will benefit from the bottom-line profits made by an HMO. Statistics demonstrate that approximately 18 to 25 cents of every health care dollar go to profit and administrative expenses in a commercial HMO. As a stockholder-owned company those profits are rightfully given to its Wall Street investors.

Physicians Care for Connecticut, Inc. will be owned by physicians and hospitals and the profit will be returned to those owners, not to Wall Street. We do not view this as fragmenting physicians. It empowers them. In our company, the HMO will do the administrative functions. The physician owners-directors of MedServ IPA, Inc. will make the medical policy decisions. In a publicly traded HMO, the objective is always the bottom line and who really believes this does not affect medical decision making?

I encourage physicians in this state to avoid being drawn into intramural battles by parties who are not disinterested. In any field of endeavor there is rarely only one correct vision or only one way to achieve a goal. That is precisely why Physicians Care for Connecticut, Inc. was created. A physician-owned HMO is as desirable now as it was when M.D. Health Plan was formed. Perhaps even more so.

Craig W. Czarsty, M.D.
President, Physicians Care for Connecticut, Inc.
Cheshire

In Response to Dr. Massey's "Getting to the Heart of the Matter"

To the Editor: "Now when the heart of our profession is penetrated, much blood issues, the pulse fades away, ... death quickly follows."

Charles W. Needham, M.D.
Norwalk

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

From the Executive Director's Office

SUMMARY OF PROCEEDINGS
CSMS HOUSE OF DELEGATES—SEMI-ANNUAL MEETING
RAMADA INN, MERIDEN—13 NOVEMBER 1996

Reports and Addresses

The House received reports, addresses and/or remarks from the president, the council, the AMA delegation, the executive director, Connecticut Medical Political Action Committee (COMPAC), Connecticut Medical Insurance Company (CMIC) CSMS-IPA and the Committee on Legislation. Most of the reports were published in the Handbook previously distributed to the delegates. The report of the president, Dr. Michael Deren, and of the executive director, Tim Norbeck, the CSMS-IPA report, and the legislative report appear at the conclusion of this summary.

Dr. Nancy Dickey, chair of the AMA Board of Trustees, addressed the House of Delegates and outlined many of the activities being undertaken by the AMA and also reported on its accomplishments. Emphasis was placed on the legislative issues before Congress.

PRINCIPAL ACTIONS TAKEN

(a) *Report of the President,* Michael M. Deren, M.D., New London. Dr. Deren's gave a comprehensive report based on the Revolution in Medicine and how CSMS can help physicians respond to it and how CSMS itself should respond to today's challenges and changes. The report appears in its entirety in this issue of *Connecticut Medicine* on page 751-53. The report was accepted as information.

(b) *Report of the Council,* Joseph C. Czarsty, M.D., Oakville. The House voted to accept, as information, the report of the chairman of the Council, which reviewed the activities of the Council since the last meeting of the House of Delegates. Minutes of the interim Council meetings have already been published in *Connecticut Medicine*. Special emphasis was given to the reports from related organizations such as CPRO, CMIC and CSMS-IPA: the various reports given at each meeting by the president, the executive director, and the chairman of the Committee on Legislation. The Council also submitted a budget for 1967 and the action taken on the Council's recommendation also appears elsewhere in this summary.

(c) *Report of AMA Delegation,* Edward A. Kamens, M.D., Fairfield. The House voted to accept the report of the AMA Delegation as information. The report contained the principal actions taken at the 1996 Annual Meeting of the AMA House of Delegates, which included information on the study of Federation outlining changes in the structure and operation of various levels within organized medicine, HIV related actions, physician-assisted suicide, managed care plans, ultimate and extreme fighting, and tobacco advertising.

(d) *Report of the Executive Director,* Mr. Timothy B. Norbeck, New Haven. The House voted to accept the report of the executive director, which appears in its entirety at the conclusion of this summary, as information.

(e) *Report of the Connecticut Medical Political Action Committee (COMPAC).* Roger S. Beck, M.D., Wethersfield, chairman of the Connecticut Medical Political Action Committee, gave an update on the current status of COMPAC. He reported that membership has increased from 545 to 712, which is over 100% of the goal set for Connecticut by the American Medical Political Action Committee (AMPAC).He stated that the bad news is that only 10.5% of CSMS membership has joined COMPAC this election year. He reported that the membership base needs to be increased. The report was accepted as information.

(f) *Report on Connecticut Medical Insurance Company, (CMIC).* Sultan Ahamed, M.D., president and chairman of the board of Connecticut Medical Insurance Company (CMIC) reported the following:

1. There would be no premium increase in 1997 with no medical or surgical changes. In four of the last six years there has been no premium increase for CMIC members.

2. CMIC's 1996 policyholder dividend of $2.25 million will be applied as a premium credit to eligible CMIC members renewing their policies for 1997. This is CMIC's sixth consecutive and largest policyholder dividend, bringing the cumulative dividend distribution to $11 million.

3. Membership is approaching 3,100. Two hundred forty-one new members joined CSMS between August 1995 and August 1996 with every county showing an increase in membership.

4. CMIC has established a Board Liaison Committee with the medical directors of the major managed care organizations (MCOs) in Connecticut and is developing a universal medical records release form to protect members when releasing patient information to MCOs.

It was reported that CMIC is developing other new projects that will be of value to its policyholders.

(g) *Report on CSMS-IPA:* Dr. David D. Thompson, Jr., M.D., president, reported on current activities of the IPA and his complete report appears at the end of this summary.

(h) *Report on Legislation:* Dr. David Parke, chairman of the CSMS Committee on Legislation, reported on two resolutions passed by the House of Delegates in May 1996. "Any Qualified Provider" and "Managed Care Liability." His complete report appears at the end of this summary.

(i) *1997 Budgets:* The House voted to approve the following budgets: CSMS operational budget, a capital budget and a Physician Health and Education Fund Budget. The dues for 1977 were set at $390.

(j) *Three resolutions were received and acted on as follows:*

1. Reduced licensure fee for retired physicians

(Approved with minor amendment)

Resolved, that the Connecticut State Medical Society reaffirm its support for a bill that would reduce the licensure fee for retired health care professionals to $10 per year so as to encourage physicians to retain their license to provide *pro bono* medical care to the community poor, subject to appropriate credentialing and professional liability safeguards.

2. Consumer Protection: Quality in Medical Policy and Medical Review

(Referred to the CSMS Council for action with the suggestion for support for incorporation in the Patient Protection Bill.)

Resolved, that the Connecticut State Medical Society recommend the establishment of an independent health care appeals committee within the Department of Consumer Protection composed of Connecticut physicians nominated by the Connecticut State Medical Society, and be it further

Resolved, that this resolution be forwarded to the governor of the State of Connecticut and other appropriate bodies who are responsible for quality of medical practice, and that this resolution be forwarded to the AMA for consideration.

3. The third resolution on Patient and Physician Awareness of Medical Billing Charges resulting from Medical Tests or Treatment was defeated.

AWARDS
CSMS PAST SERVICE AWARDS TO OFFICERS AND COUNTY COUNCILORS

Officers

Theodore Zanker, New Haven—Councilor-at-Large, 1995-1996

Councilors

Hartford County

Stanley J. Keating, M.D., Hartford, Associate Councilor and Councilor, 1989-1996

New Haven County

Craig W. Czarsty, M.D., Oakville, Associate Councilor, 1995-1996

Tolland County

Francis Van Nostrand, M.D., Stafford Springs, Associate Councilor, 1990-1996

Address of the Executive Director

CSMS House of Delegates—Semi-Annual Meeting
13 November 1996

TIMOTHY B. NORBECK

EVERY year in Australia there is a megamarathon run from Sydney to Melbourne, a distance of well over 400 miles.

In 1985, in addition to the group of young and finely trained athletes at the starting line, was a 60-year-old farmer wearing bib overalls and funny looking boots among all the latest in running clothes and footwear.

The crowd joined the athletes in laughter at the anomaly before them.

The race normally took five days and historically there were always a few runners who finished close together.

Turns out that the 60-year-old won, and in less than four days at that! He won because he was not handicapped by the limitations imposed upon the other runners by self-styled experts.

The experts said the human would function best if it ran for 16 hours and rested eight. The farmer didn't know that so he ran for 20 hours and slept four.

The experts said the best way to run was to lift up the knees and take long strides. The farmer didn't know that either, so he took shuffling strides, lifting his feet only a couple of inches off the pavement. Turns out that saves a lot of energy.

The experts said the human body required so much protein and vitamins, etc. The farmer wasn't aware of that so he ate his usual diet of pumpkins and beans, with which he was kept supplied by a friend who drove behind him. When word got out, you couldn't find a pumpkin for sale in Australia for six months.

The 60-year-old winner turned out to be a rancher who owned a good-sized farm in the outback. He had never owned a horse, so for many years he had rounded up his cattle by simply running after them day after day. As a result, he could run forever and was in superb condition.

He won because he was not handicapped by other people's ideas of what was possible. The second year, all the other runners had had that burden lifted from them.

And so it is with us. How many of us handicap ourselves and our organizations with limitations others impose by saying, "It can't be done—you can't do it?" We *can* do it. The insurers don't believe it, some of our own physicians probably don't believe it, but the Connecticut State Medical Society *can* beat them and level the playing field somewhat—but it will require a massive and united effort on your part.

The editor of the *New England Journal of Medicine* recently gave us as good an explanation as I've ever seen on how some CEOs of for-profit, investor-owned HMOs win the "money" game. First, he said, although other industries reinvest substantial earnings in training and development, they define their role more narrowly and fund neither physician training nor medical research—declaring that this is someone *else's* responsibility. Then they cover only those whose insurance is paid for by their employers, themselves, or a generous government program. Next draw in a relatively healthy population by advertising the plans in affluent neighborhoods and by showing vigorous people on mountain bikes and sailboats. Declare that the care of the poor is also someone *else's* responsibility.

Be careful how the premium dollars are allocated because *Wall Street* will be watching your "medical loss ratio." If they spend only 70% to 80% on patient care, there will be plenty left for them and their stockholders. Better yet, take it off the top. Let the doctors worry about the patients, but give them a strong financial incentive to see a lot of patients in a short time and hold back on expensive tests and treatments. And don't be concerned if someone sues for inadequate care; only the doctor will be sued.

If they are politically savvy, they can buy one or two not-for-profit organizations and convert them to for-profit companies. This can really be lucrative. It's easy to tell if they are winning the game. Each quarter the financial reports will trumpet higher earnings, the price of the

publicly traded stock will rise, and the stockholders will receive handsome dividends. And the CEOs will be rewarded with stock options, nice fringe benefits, special perquisites, and truly amazing salaries. More and more of the public, media, and legislators are seeing these schemes for what they are—and becoming offended by them.

It's obscene enough to look at the $1 billion U.S. Healthcare CEO Leonard Abramson got in the Aetna merger deal, but consider it in another way. He received 1/1,000 of the trillion dollars we will spend this year in the U.S. to provide medical care for 263 million people. One person. Just 999 *other* Leonard Abramsons and you wouldn't have anything left over for anyone else.

The red-lining and cherry picking of the insurance industry is becoming so intense that all consumers need to be wary. I heard about a man who applied for life insurance and, when asked the cause and age at death of his mother and father, he told the truth. "My mother died at 46 of cancer; my father died at 49 with a heart attack." The agent said he was sorry but he could not underwrite him.

The man applied for coverage from other companies as well but was rejected each time. Finally he applied to still another company, but this time he played it more carefully. When asked what his father died from, he replied, "He was hit in the head by a pitched ball while playing baseball at age 96." "And your mother," asked the agent. "She was 92. She died.... but they saved the baby!"

In response to the insurance industry's lobbying against managed-care regulations, and their smugness in winning last year, I would remind them of the story about the hungry mountain lion that came out of the hills, attacked a bull, and killed it. As it feasted on the bull, the lion paused from time to time to roar in triumph. A hunter in the area heard the commotion, found the lion, and shot him dead. The moral of the story is: When you're full of bull, keep your mouth shut.

Despite the negatives around us, there are still many positives and reasons to be encouraged. As you know, four months ago, the Connecticut Supreme Court revived a state law and a 1994 case against CIGNA which Superior Court Judge Jon Blue had thrown out in December of that year. You will recall that Judge Blue ruled that ERISA preempted the CIGNA case. This decision by our highest court opens the door for meaningful managed-care reform. As Attorney General Richard Blumenthal has noted, "it means that states like Connecticut need not surrender to the federal government the health-care playing field, and consumers and doctors in Connecticut can seek stronger legislation from our General Assembly." And seek it we shall!

CSMS was involved in that case for the plaintiff physicians and patients, as you well know, as was the AMA at our request, and it represents a very important step in securing needed managed-care reform.

As Dr. Dickey said: we can take heart in other developments, too. The Kassebaum/Kennedy bill assures insurance portability for workers changing jobs and coverage for patients with pre-existing conditions. The Federal Trade Commission and the Justice Department will now apply the more flexible "Rule-of-Reaston" standard to a wider range of physician networks—something for which the AMA has fought hard.

A pilot program for medical savings accounts was enacted allowing limited testing of an idea that holds great potential for assuring cost-effective quality care. Speaking of potential, and since the New York Yankees did live up to theirs in the World Series, it seems appropriate to tell a story about Casey Stengel, the former Yankee manager, who was said to be a shrewd judge of potential. He once said to a reporter: "See that fella over there? He's 20 years old. In 10 years, he's got a chance to be a star. Now that other fella over there next to him. He's 20 years old, too. In 10 years, he's got a chance to be 30."

The AMA, your AMA, was in the forefront of these significant developments which provide us with much to build on in the next few years. There remains much to do, but it is a great start. Certainly tort reform will and must be on the docket.

At one of the countless fundraisers which I attended over the past few months, I introduced myself to the man sitting next to me. He explained that he was the owner of a sports equipment manufacturing firm in eastern Connecticut. I mentioned that product liability and tort reform must be an important issue for him, and obviously struck a responsive chord. He then explained to me an all too familiar scenario where lawsuits have totally gotten out-of-hand. His company sold a piece of equipment back in 1967 to the University of Wisconsin. Twenty-three years later in 1990 someone didn't use it properly and was injured. A lawsuit against the University followed. When it appeared that the University could escape liability, guess who was sued as the deep pocket? The Connecticut manufacturer spent over $50,000 in legal bills and eventually had to pay the judgment as well. So much for fairness. Tort reform will come after managed-care reform, but it will take time. The lawyers do stick together and occasionally they do get praised.

There's the story of a group of prisoners who were complaining about the ineptitude of their respective lawyers when one of them, a fellow named Miller, expressed nothing but praise for his attorney.

"I'm here for murder," he explained, "but they never found the body." And in his closing argument, my lawyer turned to the jury and said: "Ladies and gentlemen, I have

some astounding news. The supposed murder victim has been located, and in exactly one minute will come walking in that door."

"Well you could have heard a pin drop in that courtroom," Miller continued, "as just about everyone turned to look at the door." When nothing happened, my lawyer said to the jury, "the mere fact that you were expecting the victim to walk in shows that you had a reasonable doubt that murder was committed—which your verdict should reflect."

"So my lawyer sat down very pleased with himself, and I think he's a genius. So you can imagine how I felt when the jury came back only 10 minutes later with a guilty verdict."

"Well, when the trial's over, my lawyer made a beeline for the jury foreman and howled at him: 'How could you find my client guilty? You were all watching the door.' 'Most of us were watching the door,' the foreman replied, 'but one of us was watching your client. And *he* wasn't watching the door.'"

In case anyone might be wondering what new cost-savings schemes are on the insurer drawing board after the "drive-by-deliveries" and the drive-through-mastectomies, wonder no more. An Illinois HMO, Health Alliance, is now telling doctors that its "goal length-of-stay" for heart bypass surgery is three days. This three-day length-of-stay would represent a greater than 60% decrease in the average hospital stay for bypass patients. The associate medical director of Health Alliance said that the guidelines were from the health management firm of Milliman and Robertson and approved by a panel of experts. When asked who the experts were, he said that he couldn't remember them and didn't have the list.

Of course, one of the grave dangers of such guidelines established by insurers is that they soon become the norm, and then a physician has to circumvent the system and the considerable red tape to allow any deviation from the norm. We don't want to have to fight managed-care organizations disease by disease and procedure by procedure.

No one really wants legislators to interfere in medical guidelines, but it actually did take an "Act of Congress" to force insurers to allow new mothers to stay in the hospital for 48 hours, following a normal birth, instead of being pushed out in as little as eight hours.

Speaking of Congress, 93-year-old Strom Thurman of South Carolina was reelected again eight days ago as United States Senator. He is the oldest person to ever serve in Congress and is rumored to marry a 22-year-old every 22 years.

Recently he took his young children to a horse breeding farm. The tour ended at 4:30 P.M., and unfortunately Strom arrived in his station wagon a little past five. Strom mentioned in the strongest terms that he was a U.S. Senator, and should be allowed immediate entry, but the security guard wouldn't let them in. The small children were very disappointed and their little faces showed it.

Finally the security guard looked at 93-year-old Strom and then again at those little faces. "Are those your children?" the security guard asked. "Of course they are," said Strom emphatically. The guard finally relented and waved them in. But Strom was not satisfied. "Do you mean to tell me," he said, "that you wouldn't let me in even though you knew who I was, but you would let us in because the kids wanted to see the horses?" "Oh, no," the guard replied, "we wanted the horses to see you."

It is not easy to educate the public on managed care although we are making some progress. A recent New Jersey poll showed that about one-half of its residents have heard or read little or nothing at all about managed care, despite its continuing growth in the state. But eight of 10 said choosing their own doctor was more important than reducing their health-care costs. While I think we are ahead of New Jersey in getting the message out to the public, connecting with the public is not easy. Columnist Molly Ivins told of the film called "The Madness of King George." The original title was "The Madness of King George III," but the distributors nixed the "III" for the American market because people might think they had missed parts I and II.

Samuel Goldwyn's PR office explained that when they had previously distributed "Henry V," they had that problem: People kept calling to ask where they could get the early parts, so they decided not to risk the same problem with George III.

Do not be discouraged if progress in managed-care reform is not readily apparent. It was a Danish reformer who noted that "when nothing else seems to help, I go and look at a stonecutter hammering away at his rock, perhaps a hundred times without as much as a crack showing in it. Yet at the hundred and first blow it will split in two, and I know that it was not that blow that did it—but *all* that had gone on before."

People are the ultimate power—especially if they are indignant.

With each day, our movement for reform grows.

The Constitution of the United States guarantees us the "pursuit of happiness," but as Ben Franklin cautioned: "It only guarantees the pursuit; we have to catch up with it ourselves." That requires effort and unity.

In Canada the Calgary stampede has a contest to see which draft horse can pull the greatest weight over a required distance. One year the winning horse pulled just over 9,000 pounds, while the second place finisher pulled just under 9,000 pounds. The owners gave the crowd a

demonstration of what the two horses could do if they pulled together. And what do you suppose? Together they pulled, not 9,000 pounds, not 18,000 pounds, but 27,000 pounds. There is a message in that for *all* of medicine.

An African proverb says when elephants fight, it's the grass that suffers. When doctor's groups compete like bull elephants, nobody gains, and it's the profession that gets trampled.

Above all, we must *not* allow our differences to define us. If medicine has duties beyond those to stockholders, and *Wall Street's* short-term earnings growth mentality, and all of us gathered in this room know it does,—duties to care for those in need, duties to educate future generations of caregivers, duties to conduct lifesaving research and to expand the frontiers of knowledge, and duties to provide the best and most appropriate care possible for every patient—then we must all unite and take our case to the public and legislature.

We are doing that now, but we cannot afford internal bickering. When Andrew Jackson, "Old Hickory," died, someone asked: "Will he go to heaven?" The answer was: "He will if he wants to." We need that same degree of resolve. Physicians can win this fight in Connecticut and other states, if they want to—if they *really* want to.

Michael M. Deren, M.D., president, Mrs. Deren, and Dr. Deren's parents.

Address of the President

CSMS House of Delegates—Semi-Annual Meeting
13 November 1996

MICHAEL M. DEREN, M.D.

New Barbarians at the Gate

AMERICAN medicine represents the best, most compassionate, and highest standard of medical care in the world. Patients come from all over the globe to the United States for their advanced medical and surgical care. They don't go to Canada, Europe, or the Pacific rim, but rather they come to Hartford, New Haven, Houston, and occasionally even Boston. This is one of the messages I convey to the people and groups that I meet as your representative and president.

Since the beginning of this year as your president, I have attended nearly 100 functions representing Connecticut physicians at interviews, dinners, meetings, and testimonials and have met legislators, commissioners, and supreme court justices, not to mention numerous physicians and state leaders from the Connecticut bar association and the trial lawyers association as well as representatives of nurses, chiropractors, pharmacists, podiatrists, dentists, and medical subspecialists.

As a result of these meetings I have learned that one fact stands out above all others and that is: medicine in Connecticut and its physicians are very highly and universally respected. The CSMS has 6,800 members, representing 90% of Connecticut's practicing physicians. We are viewed generally as a unified, cohesive group. We are perceived as strong and vital and are sought after by the media, legislators, and advocacy organizations for our support and advice in medical matters.

The CSMS is especially strong in the legislative area and we look forward to a very active year in Hartford this legislative session.

None of this would be possible without your support as a whole and from the representatives sent by the counties to the CSMS governing council, which has been particularly active and helpful this year. I would like to thank the council for its past support and its continued assistance during the next six months.

Being your president reminds me of Walter Cronkite's story of when he was sailing his boat to Maine. As he approached shore he saw people frantically waving to him, saying, "Hello Walter, Hello Walter," which he thought was very flattering, since this was his first trip to Maine. His boat soon ran aground. He learned later that what the people on shore had been saying was, "low water, low water." More often than not, meeting with representatives of other organizations has not been a friendly "hello" but rather has led to difficult negotiations on a variety of issues.

Although the position of CSMS president is important, its basis is a collaborative power structure. Power here is like sex. Everybody thinks there is more of it than there really is and that somebody else is getting most of it.

There are two topics I would like to discuss briefly today. The first is the revolution in medicine and how the CSMS can help physicians respond to it and second how the CSMS itself should respond to today's challenges and changes.

There is a revolution going on in health care. Revolutions are not new to America nor to physicians. In June 1775, Dr. Joseph Warren, a Boston physician, became irate over tyrannical British practices, then locked his office door, bought arms and ammunition, and went to fight at Bunker Hill. Dr. John Ely, a Middletown physician, fought the British here in Connecticut and, after capture, refused to leave his wounded comrades and remained a British prisoner until the end of the Revolutionary War, despite being ransomed by his son. Throughout history, physicians have been revolutionaries. Sun Yat-sen and Che Guevara are two notable examples.

Dr. Mary Edwards Walker, the first woman to receive the Congressional Medal of Honor, is another outstanding medical revolutionary. She received the medal for her work as an army contract surgeon and Union spy during the Civil War. Mary Walker was also an independent, tireless proponent for major social change and well ahead of her time.

Today the status quo has been shaken up, challenged, and most of all changed and changed radically. Physicians are part of this revolution and must direct it and guide it. This medical revolution is the most momentous change we have seen in over one hundred years, not only because medicine is struggling with the shift from the industrial age to the information age, but also because of the change from traditional forms of practice to managed-care practice.

At this moment in time the future direction of medical practice is being determined by the interaction between corporate board rooms and organized medicine rather than in the university laboratory or medical school hospital. The destiny of medical practice rests with us here today and future physicians will look back to see how we have handled our stewardship of medicine. This is an exciting time to be a physician in organized medicine, as all of us here today are, because we will have to make a difference. Today's organized medicine needs physician renegades, risk takers, and role breakers who test limits, who are not afraid of change, and who bravely face a different future. As Martin Luther King said, "the ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and adversity."

Medicine as an ethical enterprise with the patient-physician relationship at its center is in danger. The traditional forms of medical reimbursement, which brought forward the best medicine in the world, are being challenged. The change is from patient care to profit care, a change that is not in the best interest of patients and society and which has allowed obscene profits to be made by predatory managed-care and corporate executives. This has been seen for what it is: Pigs at the trough trying not to get dirty.

Overly enthusiastic managed-care proponents suffer from cognitive dissonance. They want the best health-care system in the world without supporting research, education, substantive quality, universal access, and care of the indigent and economically disadvantaged.

When people speak of the death of private physician practice and enterprise, I am reminded of when the doctor visiting Connecticut-born Ethan Allen on his deathbed said he realized Allen was gravely ill and might die. He told the old soldier that "The angels are waiting for you." Game to the end, Ethan Allen replied, "Waiting are they? Waiting are they? Well goddam 'em, let 'em wait."

The pendulum is swinging away from predatory HMOs and managed care. We see it from patient complaints, the media, the legislature, and from the public as a whole. Some thought the pendulum would never swing, would never change. In *Fortune Magazine's* first issue, February, 1930, it reported that 94% of all passenger cars in Japan were made in America. Who can forget Henry Ford II's comment in 1957, "the Edsel is here to stay."

I am not opposed to managed care, but remember it is only a portion of medical care and we as physicians must challenge, change, and direct it.

It has become common to think of the HMOs as barbarians at the gates of medicine, with embattled physician dinosaurs behind the ramparts. This is a passé and overused cliché. Now is the time for physicians to become the barbarians at the gates of the HMOs. We can learn to bear, allocate, and manage risk, leading to direct contracting and the eventual diminishment and atrophy of HMOs.

We have to be more like the "barbarian," Attila the Hun, the Scourge of God, who lived in the fifth century of the common era. Attila was far from an ignorant barbarian. His father was a king of Asiatic steppe nomads. When Attila's father died, his uncle took over and gave Attila to the Romans as an exchange hostage to insure an alliance, the usual Roman practice of the day. The Roman exchange hostage given to the Huns was educated and learned the Hunnish ways and reported back as a spy. The barbarian hostage usually was overwhelmed by the splendors and power of Rome and tended to civilize himself and his people.

Attila was different. He realized that the Huns, Visigoths, and other barbarian tribes did all the fighting for the Romans. He learned everything he could about Roman tactics and warfare, then he escaped, involved apparently in the death of his uncle and brother (no one is perfect), and then went on to conquer a good portion of the known world, following which he went home, got married, and died on his honeymoon from natural causes, a hemorrhage brought on by the excessive festiveness of his wedding. Not a bad life.

Physicians have been hostages to managed care far too long. We have learned, and now is the time for us to take back control of medical care for the sake of our patients. Give us control and we will show what can be done. Business managers do things right. Medical leaders do the right things.

The CSMS and I, as your president, are concerned with physicians in our state and their ability to take control of medical care in our section of the country. Managed care is different in different parts of the county. It is different

here from the way it is in California and Minnesota. We do not need to make the same mistakes. We should be able to shape how patients receive care in Connecticut.

Predatory managed care is like a smallpox epidemic. In the past when smallpox devastated populations, the virus was most virulent at the outset. But as resistance grew in people's immune systems, the virus became attenuated and the next victims did better, survived, and eventually the virulence of the epidemic was gone. The analogy may not be precise, but it fits the managed-care scenario.

We now have experience with the HMO system. We know its weaknesses and failures and most especially we know that we are the only ones who can do the fighting, the actual work of taking care of patients. We should be able to take advantage of our knowledge and begin returning control of medicine to physicians. I believe that organized medicine, the CSMS, and we here today must assist physicians in the revolution of the new medicine.

My vision as your CSMS president has been to put doctors once again in the driver's seat so they will be better able to take care of their patients. To accomplish this I have proposed a feasibility study for the formation of a statewide PSO, a physician service organization.

What is a PSO? There are different types with different types of services offered.

I envision an entity which would insure physicians have access to needed services including: a statewide medical information system; managed-care contracting assistance, both negotiation and analysis types, for individual, small and large group practices; all the infrastructure of an HMO including continuous quality improvement, utilization review, outcomes measurements, data analysis, and credentialing, but not including a risk-bearing entity; assistance with practice development and management; and education and re-education of physicians.

All of this is to be done at the local level, as all health care is essentially local. We should do this together with the county associations to the extent they wish to be involved, as it is important to proceed in a unifying manner. The purpose is not profit for the CSMS. The success of this program will be measured in how it helps physicians.

Looking at it in a different way, the core purpose of the CSMS PSO is: to assist physicians who seek proactive strategies in addressing the challenges of the market place; to enable doctors to bear, allocate, and manage risk; to have an alternative to selling your practice; and to take back control of patient care. It gives physicians services and negotiating power. Make no mistake about it, it is a bold step that has risks, but the risks of doing nothing are far greater.

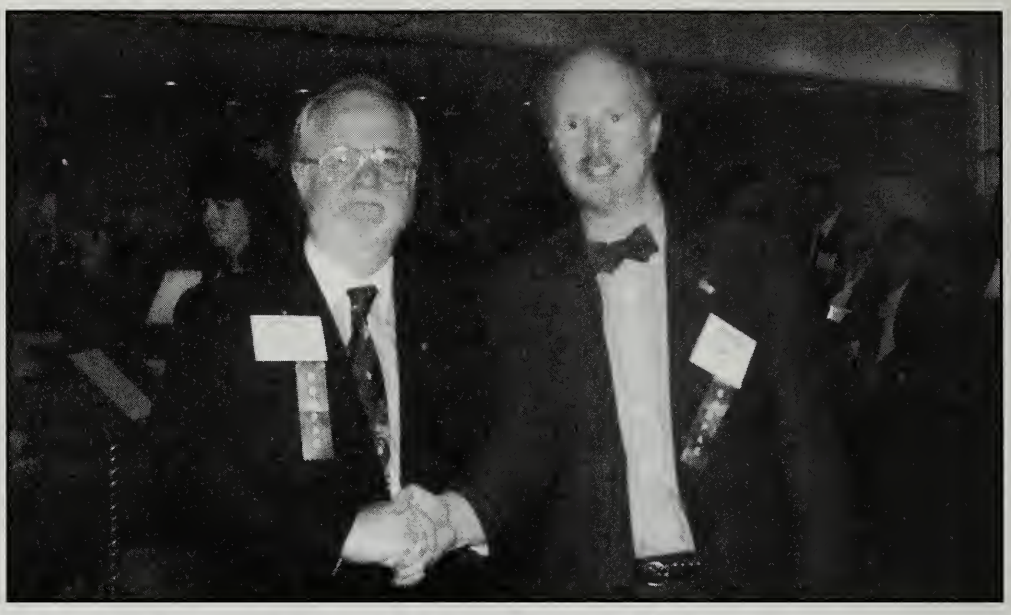
The proposal and beginning of the PSO feasibility study has consumed the first half of my year as your president. It will take many more months to come to completion and cannot be done without everyone's help and support.

During the second half of my year as your president I would like to evaluate changes in the house of medicine, a far more complex and politically charged subject. The CSMS must look internally at itself to continue responding to today's challenges and changes. Several areas come immediately to the forefront: women in medicine; subspecialty representation; reorganization of the Society itself; and evaluation of how the house of medicine is organized in the State of Connecticut. This would, of necessit, have to look at how the counties function in relation to the State Society, how the county associations and State Society can work closer and as one cohesive unit and how we select our representatives, especially our president.

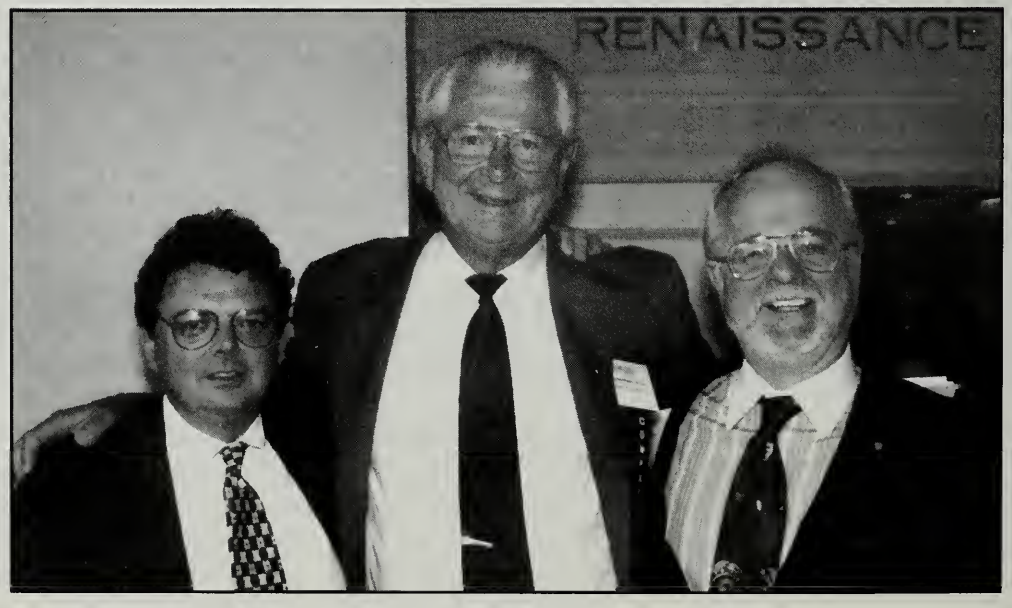
All delegates and members are invited to speak or write to their councilors and representatives or myself with their ideas on how this should be done. The governing council has already formed a committee on the reorganization of the house of medicine. The committee will meet and go over your suggestions and decide on appropriate changes on how best to represent physicians during the revolution of the new medicine. The purpose is not to reorganize for the sake of reorganization, but to reorganize to best fulfill the vision and goal of having a strong and unified voice in medicine with physicians in control of medical care to better serve patients.

In summary, I have discussed first, the revolution in medicine and how the CSMS can assist Connecticut physicians by insuring they have access to needed services through a statewide PSO, and, second, the need for reorganizing our house of medicine. Physicians cannot play it safe. It is what we here today do from now on that will determine whether we move our profession forward by determined steps or go backward. The future is a threat only to those who will not change. With your help we will succeed in having doctors take back their rightful place as the guiding force in patient care.

President Michael M. Deren, M.D. with Past President Dickerman Hollister, Jr., M.D.



Michael M.Deren, M.D, President, addressing House of Delegates



John P. Bigos, M.D, CSMS Secretary, Joseph S. Sadowski, M.D., AMA Delegate, and Michael M. Deren, M.D., President.

Report on Legislation

DAVID W. PARKE, M.D.
Chairman of the Committee on Legislation

Report on two resolutions passed by the House of Delegates in May 1996.

ANY QUALIFIED PROVIDER

This House voted in May to reaffirm the Connecticut State Medical Society's support for Any Qualified Provider Legislation. As you know, during the last session of the legislature, CSMS agreed with legislative leaders to soften our insistence on AQP in exchange for our being major players in the development of managed-care reform legislation. This was done only after experiencing two prior years of stonewalling by legislative leadership on this issue and then being told last year that if we insisted on AQP, we would not be considered players on the issue of managed-care reform. Let me clarify: we have never abandoned our support of the concept—we just did not feel it was prudent to condition our support of managed-care reform legislation on the inclusion of AQP.

The legislative opponents of AQP whom we have faced in the past have been the speaker of the House, the majority leader in the House and the house chairman of the Public Health Committee. But please do not think that these legislators are our enemies, for they have been true friends and tireless leaders on the issue of managed-care reform.

January 1997 will usher in a new legislative session and we have been charged by this House of Delegates to continue to support AQP. We feel that it is important that the House of Delegates is fully aware of the politics of the issue for the coming legislative session during which we intend to be a major force in managed-care reform by introducing the newly revised Patient Protection Act on which our Committee on Legislation has been working for many months.

In response to your resolution on this subject the Council directed the Committee on Legislation to study the issue. After due discussion in committee we asked our lobbyist to monitor the issue closely. COMPAC also included the subject in a survey that was sent to all candidates prior to the election. Of candidates for the House who responded to the survey, 21 successful members indicated support (11 of them Republicans) while 25 indicated opposition to the issue. On the Senate side the COMPAC questionnaires indicated that eight favored the subject and six opposed.

As a result of the recent elections in the House we return with the same leadership. All oppose AQP and they will control the agendas of the Public Health Committee and the House. Lacking their support it will be difficult to have the issue raised in any form, ie, as a separate bill or as an amendment to another bill.

In the new Senate we will have Democratic leadership which means that the former Senate chairman of the Public Health Committee, who supported AQP, will not be chairman. There is no support for AQP in the governor's office. And our lobbying foes, the HMOs and CBIA, continue to vehemently oppose AQP. They have even suggested reversing the issue so that HMOs, if they chose, can require participation even if you are not "willing."

The members of the AQP Coalition, the chiropractors, podiatrists, dentists, optometrists, and psychologists, who were our lobbying allies, will be lobbying for mandatory point of service as part of managed-care reform. The Health Care for All Coalition, headed by the Connecticut Citizens' Action Group, also will be lobbying for inclusion of point of service.

Therefore my message to you is that the political scene for AQP is not very promising. We do, however, have an excellent chance to effect substantial managed-care reform. The new Democratic control of the Senate gives us great hope on this issue, but we will also be testing the House resolve. You see, last year the HMOs did not waste their time lobbying the House because they knew that managed-care reform of substance would be killed in the Senate. This year House members who may feel beholden to the HMOs and CBIA probably will not cast a vote for reform so readily.

MANAGED CARE LIABILITY

This House of Delegates has asked us to support legislation that would require that managed-care organizations be held liable for the decisions being made by their utilization review process. We have adopted this into our legislative platform and already we have found support from many legislators.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the Journal for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

Report on CSMS-IPA

DAVID D. THOMPSON, JR., M.D.
President

The CSMS-IPA is trying to set the right example for HMOs in Connecticut and in the nation.

1. Any Qualified Provider (AQP) is a concept that has been the foundation of M.D. Health Plan and the CSMS-IPA since its inception. While the CSMS and the AMA are trying to gain legislative support for making this concept mandatory in the state and the nation, CSMS-IPA is trying to prove that it can be successful in the marketplace. HMOs want to claim that AQP would be uncompetitive. CSMS-IPA wants to prove that we can compete successfully and provide the choice that patients want.
2. No capitation would ever be considered by the CSMS-IPA. Some feel that individual capitation puts the financial interests of the individual M.D. in direct conflict with the needs of the patient and is immoral and unethical. Capitation may be quite effective in lowering costs. CSMS-IPA wants to prove that costs can be contained without capitation. We are absolutely opposed to capitation.
3. No Gag Rule would ever be allowed in a physician-run program like the CSMS-IPA. This rule is inappropriate and unnecessary. It is contrary to the best interests of the patient and the physician who is the guardian of the patient's interests.
4. Open access is the premise of the CSMS-IPA. True choice would allow patients to seek care from primary care or specialists as their needs dictate. CSMS-IPA is trying to prove that costs can be contained and patients' right to choose can be protected.
5. Physician involvement is paramount. The CSMS-IPA is a wholly owned subsidiary of the Connecticut State Medical Society. The 24 members of the Board of Directors are all practicing physicians. All decisions, including the unpopular decision to lower fees, are made entirely by physicians.
6. Physician control allows us to respond to initiatives like that of the Fairfield County Medical Association who sought to change the blanket release used in credentialing. Physicians were being required to give up all rights to confidentiality even with regard to drug and alcohol rehabilitation programs. CSMS-IPA changed the requirement and will seek only the information that is public from the Board of Medical Examiners and Department of Health.

CSMS-IPA is the physician organization that wants to prove that high quality, cost-effective care can be competitively delivered in the marketplace while embodying the principles that are promoted by the Connecticut State Medical Society.

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

FAMILY PRACTICE

Seeking a BC/BE family practice physician to join an active family practice in Stamford, Connecticut. This service area allows for tremendous growth potential. The 4,000 square foot office is located near the hospitals. Competitive compensation package includes full benefits and the opportunity for partnership. Additional benefits include call coverage, and a network alliance with Connecticut Health Enterprise. Enjoy living on the shores of Long Island Sound, in this waterfront community with beautiful beaches, rolling hills, and charming New England neighborhoods. Childcare magazine has listed Stamford as one of the five best places to raise children in the United States. Top ranked school systems and low crime. Only 40 miles to New York City. Contact: Tammy Pavlock or Barbara Volk at 1-800-521-6780 or send CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

Charming family practice office/home located in the beautiful New England coastal community of Trumbull, Connecticut. This well established solo practice with over 3,000 patients is in a scenic residential area. The retiring physician is the Chairman of Family Medicine Department and seeking a BC/BE family practitioner who will provide only the highest quality of care to his patients. Picture living in this New England coastal community with abundant recreational activities and excellent schools. Easy access to the local airport and metropolitan amenities. Benefits: call coverage, academic affiliations, and network alliance with Connecticut Health Enterprise. Contact Tammy Pavlock or Barbara Volk at 1-800-521-6780 or sent CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

INTERNAL MEDICINE

Private practice opportunity for internist, cardiologist, or gastroenterologist. Must be BC/BE. Send CV to: CSMS c/o IM/JM.

NEUROLOGY

Neurologist to join neurosurgical group. Must be BC/BE and have experience in Neurodiagnostic—NCV, EEG, EMG, EP, etc. Send CV to: CSMS c/o N/JM.

NEUROSURGERY

Neurosurgeon to join neurosurgical group in Connecticut. Must be BC and have a special interest in spinal surgery. Excellent opportunity for partnership. Send CV to: CSMS c/o NS/JM.

ORTHOPEDIC SURGERY

Orthopedic surgeon to join neurosurgical group. Must be BC/BE and have a fellowship in spinal surgery. Send CV to: CSMS c/o OS/JM.

PEDIATRICS

Central Connecticut—Excellent opportunity for BC/BE pediatrician to join a young, very well-respected, three-person group. The practice is situated in a safe, attractive suburban location and is affiliated with Bristol Hospital, a 150-bed, contemporary, progressive, community hospital serving a population of 100,000. Attractive, competitive compensation package and call schedule. Call (800) 891-3846 or fax your CV (860) 585-3525.

Exceptional opportunity to join a pediatric practice of four BC/BE pediatricians. Located in shoreline community, five miles from Yale-New Haven Medical Center, our chief hospital affiliation. Salary $120,000/year, 1:4 coverage. Malpractice insurance included. Partnership available. Part-time position available. Call: (203) 248-4846, any evening after 8:00 p.m.

The Department of Pediatrics at the Hospital of Saint Raphael is seeking a full-time pediatrician with a commitment to teaching and clinical care. Saint Raphael's is a 480-bed community

teaching hospital affiliated with Yale University School of Medicine and sponsored by Yale pediatric residents, Yale medical student,s and physician assistants. The Department of Pediatrics is an integrated team of five pediatricians, six nurse practitioners, and four physician assistants. Saint Raphael's offers a competitive salary, as well as medical, dental, liability, disability, education, and retirement benefits. For further information, please contact: Richard S.K. Young, M.D., M.P.H., Chair, Department of Pediatrics, Hospital of Saint Raphael, 1450 Chapel St., New Haven, CT 06511, telephone (203) 789-3499, fax (203) 789-4110.

Main Street Pediatrics is seeking dynamic BC/BE pediatricians to join the staff of this growing group practice. The offices are located in Fairfield County, Connecticut. This group provides the highest quality of care and has an excellent reputation within the community. The call will be approximately 1:6. Enjoy a four day work week with an excellent compensation and benefits package. Additional benefits: F/T or P/T schedule, academic affiliations, partnership with no buy in, and network alliance with Connecticut Health Enterprise. Move to this beautiful New England coastal community and experience the best quality of life. This suburban area is abundant in recreational activities and only 90 minutes to the amenities of NYC. Contact Tammy Pavlock or Barbara Volk at 1-800-521-6780 or send CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

PHYSICAL MEDICINE AND REHABILITATION

Medical doctor wanted. Live the life you've dreamed of and raise your children in the country. Two hours from Boston, two hours from Canada. If you like hiking, biking, skiing, fishing, boating, snowmobiling, etc. READ ON! No nights, no weekends, no rotations—NO EMERGENCIES! Health oriented/physical medicine practice. Full or part -ime position, monthly salary of $4,000-$7,000 based on experience and qualifications. We are looking for a conscientious, hard working doctor. Send CV and photo to Dr. Walter Moore, 50 Main St., West Lebanon, NH 03784, fax (603) 298-5338.

PRIMARY CARE

Growing regional community health center with three sites in eastern Connecticut seeks BC/BE FP/IM to provide full range of preventive and primary care. Provide quality health care free from responsibilities of billing and office management. Competitive salary and benefits. For more information call or send CV to Health First Recruitment Manager: Roxanne Pandiani, 231 Broad Street, Danielson, CT 06239, telephone (860) 774-7501, fax (860) 779-2191.

PULMONARY MEDICINE

Seeking full-time BC/BE pulmonologist to join a rapidly growing Pulmonary Practice in southeastern Connecticut. Excellent opportunity leading to full partnership. Please send CV to: CSMS c/o PM/NL.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

ANESTHESIOLOGY

Available immediately. Licensed in Pennsylvania. American Board eligible. M.D. at Albany Medical College, Albany, New York. Internship and residency at Albany Medical Center Hospital, Albany. Would like to join a group, associate, or institutional practice. Please respond to: Michelle M. Bouyea, M.D., 31 B Elm Ave., Delmar, NY 12054, telephone (518) 478-9514.

INTERNAL MEDICINE

Available July 1997. Licensed in Michigan and New York. Passed FMGEMS and FLEX. American Board eligible. M.D. at Varna Medical University. Internship at Booth Memorial Hospital, New York. Residency at NYU Medical Center. Looking for an internal medicine or primary care position in a health professional shortage or medically underserved area, qualifying for J-1 visa waiver. Please respond to: Denis F. Kamberov, 625 Main St., Apt. 744, New York, New York 10044, telephone (212) 223-1586.

Available immediately. Licensed in Connecticut and New York. Passed National Boards. American Board eligible. M.D. at Alexandria University Medical School, Egypt. Internship, residency, and fellowship at Jewish Memorial Hospital, New York. Would like to join a group or industrial practice with interest in quality, cost-effective medical care. Please respond to CSMS c/o IM/JM.

OBSTETRICS AND GYNECOLOGY / PRIMARY CARE

Available immediately. Licensed in Connecticut. American Board certified. M.D. at Georgetown University. Internship and residency at St. Vincent's Hospital. Seeking a part-time position. Will consider consulting or clinic work. Please respond to CSMS c/o OB/JP.

PSYCHIATRY

Available July 1997. American Board eligible. M.D. at M.A.M. College, New Delhi. Internship and residency at Baylor College of Medicine, Houston. Seeking a position with a mental health center in a medium size community, qualifying for J-1 visa waiver. Please respond to CSMS c/o P/SS.

PAID CLASSIFIED ADVERTISING

All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

MEDICAL OFFICE CONDOMINIUM LEASE OR SALE
19 Woodland Street, Hartford, Conn.

Available 1,297 sq.ft. office condominium for lease or sale. Ground floor next to pharmacy, lab, and x-ray, in well-established medical building. Award winning historic renovation, easy access off I-84, with free patient parking. Call Val Willey (860) 529-6668.

MEDICAL CONDO FOR SALE

Glastonbury, 300 Hebron Avenue—2,500 sq.ft. in first-class medical building. 1,000 sq.ft. presently subleased to medical lab with income of $2,400 per month. Contact: Paul R. Senger, M.D., (860) 525-6679.

SOLO PRACTICE OFFICE FOR SALE

Primary Care / Family Practice / Internal Medicine physician in Weston (population 10,000; executive community), retiring his solo practice. Office (1,950 sq.ft.), fully equipped including x-ray. At Town Center, Colonial home adjacent with pool, 1-1/3 acres, 20 minutes from Yale, 80 minutes from Manhattan, 15 minutes from Long Island Sound marinas and beaches. Write or call: T.L. Bucky, M.D., 151 Weston Road, Weston, CT 06883, telephone (203) 227-9333.

New Handbook on Child Abuse and Neglect Available

The state Department of Children and Families, in conjunction with the medical community, has produced a handbook for health-care professionals on "Identifying, Reporting, and Managing Suspected Child Abuse and Neglect."

The handbook has been endorsed by the Connecticut Chapters of the American Academy of Pediatrics and the American College of Emergency Physicians, the Connecticut State Medical Society and its Orthopedic Section, and the Connecticut Academ y of Family Physicians.

The handbook is designed to:

- Help health-care professionals identify the signs, symptoms, and characteristics of child abuse and neglect;
- Outline the reporting requirements and procedures for mandated reporters;
- Recommend ways to manage suspected child abuse or neglect cases, including ordering diagnostic procedures, using the 96-hour hold, collecting evidence, writing a medical affidavit, and discussing the situation with the child's parents; and
- Explain the role of the Department of Children and Families when a report of suspected child abuse or neglect is received.

Free copies of the handbook are available by calling the Department of Children and Families' Medical Director's office at (860) 550-6460 or the Public Information office at (860) 566-4396.

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